



(RESEARCH ARTICLE)



## Pap smear test: Knowledge, Attitude and practice among the female nursing and paramedical staffs of Maternity and Child Hospital, Al Ahsa, Saudi Arabia

Ali Sadiq Alhelal \* and Nayla Jamal Bushaqer

*Department of Obstetric and Gynaecology, MCH hospital, Al Ahsa. Saudi Arabia.*

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### Abstract

**Background:** A Pap smear test is a microscopic examination of uterine cervix which can detect the precancerous changes in the cervix (cervical dysplasia). Presence of human papilloma virus (HPV) and presence of precancerous changes in the cervical cells confirms the diagnosis. So early detection of HPV (causative factor) and precancerous changes in the cervix (cervical dysplasia) can help in early treatment of cervical cancer and complete cure. Being asymptomatic at presentation it is important to screen all the women at risk of getting cervical cancer for early diagnosis and its secondary prevention. Knowledge is one of the important determinants predicting health behaviors and an effective factor in performing screening methods in the population. However, acquiring knowledge only is not adequate and success of a prevention programme depends on the positive preventive attitude and correct practice of the population. The present study was done to assess the knowledge, attitude and practice of the healthcare workers at MCH hospital, Al Ahsa Saudi Arabia towards the Pap smear screening test.

**Results:** A total of 217 out of 258 staffs responded the online questionnaires making the response rate of 85%. The mean age of the participants was  $32.83 \pm 7.20$  Std. Dev. (Range 21-61 years). Majority of the participants (N= 180, 82.9%) were married. Seventy percent of the participants (N=152) were staff nurse. Sixty four percent of the participants were graduate (N=139). The mean knowledge of the participants was  $6.31 \pm 3.24$  Std. Dev. (Range: 2 -10). More than fifty percent of the participant (N=109) did not have good knowledge about Pap smear test. The mean of positive attitude score was  $3.56 \pm 1.19$  Std. Dev. (Range: 00-5). Fifty eight percent of the participant (N=128) had positive attitude towards Pap smear test. The mean of practice score was  $2.21 \pm 1.00$  Std. Dev. (Range: 00 - 4). Sixty eight percent of the participants (N=191) did not have good practice towards Pap smear test. The attitude of staff nurses was significantly positive ( $p=0.024$ ) than those of other medical staffs. The practice of the nursing staffs towards the Pap smear test was significantly negative ( $P=0.000$ ) than those of other medical staff. There were no significant difference in the knowledge, attitude and practice score between different age groups and marital status of the participants.

**Conclusion:** This study has demonstrated a moderate level of knowledge and attitude among the paramedical and nursing staffs of Maternity and Child Hospital towards Pap smear screening test. However good knowledge and attitude did not translate into good practice in most of them especially among the nursing staffs. The rate of uptake for Pap smear test was low. The major reason for low uptake of Pap smear screening among the respondents include, no recommendation by any doctors, embarrassment, lack of knowledge about the Pap smear, lack of time and fear of the test result.

**Keywords:** Pap smear; Cervical cancer; Knowledge; Attitude; Practice

\*Corresponding author: Sadiq Alhelal

## 1. Introduction

Cervical cancer is a completely preventable condition due to its well defined long premalignant phase which can be detected by simple regular screening tests. But unfortunately it is still the second most common cancer in women between the age group of 15 and 44 years of age [1]. Cervical cancer is a worldwide public health problem. In 2012, cervical cancer was the fourth most common disease in women and the seventh around the world, representing approximately 9 of every 10 deaths in less developed regions [2].

A condition, commonly asymptomatic at presentation is mainly caused by a human papilloma virus; A study has found that virtually all cervical cancer specimens contained HPV DNA which suggested that HPV infection is a necessary cause of cervical neoplasia [3]. However there are certain co factors which modify the risk of getting cervical cancer among HPV-DNA positive women which include smoking, high parity (5 or more full term pregnancies), use of contraceptives for more than 5 or more years, sexually transmitted disease such as Chlamydia trachomatis and herpes virus type2 and women exposed to human immunodeficiency virus (HIV) [2].

Being asymptomatic at presentation it is important to screen all the women at risk of getting cervical cancer for early diagnosis and its secondary prevention. For this purpose Dr. George Papanicolaou (1928) developed a test named on his name 'Pap smear test' [4]. A Pap smear test is a microscopic examination of cells taken from uterine cervix. This test can detect the precancerous changes in the cervix (cervical dysplasia). Presence of human papilloma virus (HPV) and presence of precancerous changes in the cervical cells confirms the diagnosis. So early detection of HPV (causative factor) and precancerous changes in the cervix (cervical dysplasia) can help in early treatment and complete cure.

The American Cancer Society suggest Pap smear test to start by the time woman reach 25 years of age and should be done on yearly basis afterward. The screening interval should be increased to 2-3 years after 30 years of age. Those aged 25 to 65 should have a primary HPV test every 5 years. Pap test is a simple painless and relatively reliable screening method to detect cervical cancer. This method can diagnose the precancerous lesion of the cervix 10 to 20 years or before cancer development [4]. The American College of Obstetricians and Gynecologists(2018) suggests that there should not be any screening for cervical cancer (Pap smear test) for women younger than 21 years of age. However women between the ages 21- 29 years should have Pap smear test every three years. Women between the year 30-65 should go either Pap test or HPV test (co-testing) every five years or should have Pap test alone every three years or should have HPV test alone every five years. Women more than 65 years old do not need screening if they have no history of cervical changes and either three negative Pap test result in a row or 2 negative co-test results in a row within the past 10 years with the most recent test performed within the past 5 years [5]. However, studies show that the percentages of women aged 25-49 years who had a Pap smear was least in Saudi Arabia (7. 6%) as compared to Oman (10. 6%), Kuwait (28. 0%) and USA(80%) over the past three years [6, 7] Various studies around the world have shown a direct relationship between the high intake of Pap smear and mortality reduction due to cervical cancer [5].

Knowledge is one of the important determinants predicting health behaviors and an effective factor in performing screening methods in the population. However, acquiring knowledge only is not adequate and success of a prevention programme depends on the positive preventive attitude of the population. The health care workers are the frontline in the health care system and the efficiency for convincing the patients depend on their own sound knowledge, their positive attitude and correct practice towards the Pap screening test.

Various studies around the world has shown deficient knowledge and negative attitude of the paramedical staffs towards Pap Smear test, One Indian study has shown that only one third of the staff nurses knew that Pap smear screening should start at 21 years or 3 years after sexual debut. Age was found to be a significant predictor of awareness of Pap smear screening among nursing staff. Only 16. 6% nurses, who were aware of a Pap smear (11. 9% of the total sample), had ever undergone a Pap smear test. Most common reason offered for not undergoing Pap smear test were, they felt they were not at risk (41%), uncomfortable pelvic examination (25%) and fear of a bad result (16. 6%) [8].

In a Malaysian study an adequate knowledge on cervical cancer and Pap smear was identified only in forty eight percent of the study participants. However 51. 9% of the participants had positive attitude towards Pap smear. Factors associated with the level of knowledge were some of the variables in lifestyle practices and family factors. Factors associated with level of attitude and practice of Pap smear includes variables in socio-demographic, socio-economic, lifestyle practice, health, and family factors [9].

Another Indian study has shown low pap smear test awareness (55. 1%) among the nurses while the utilization of pap smear among nurses was only with an average of 1. 23% pap smear per individual. The most common reason for not

undergoing screening was that nurses did not feel the need to be screened unless they were symptomatic (55%), shyness (11. 1%), fear (11. 1%) and lack of time (7. 4%) [10]

Many studies have been done in Saudi to test the knowledge, attitude and practice of the general population and most of them have found deficient knowledge, negative attitude and incorrect practice regarding Pap smear test to screen cervical cancer. Thereis very few studies done in Saudi Arabia to determine the Knowledge, Attitude and practice towards pap smear test among the nurses and paramedical staffs of a gynecology hospital. To the best of our knowledge, this was the first study of its kind done in Maternity and Child Hospital, Al Ahsa, Saudi Arabia.

## 2. Material and methods

It was a cross sectional study to be conducted between January 2022 to February 2022 at Maternity and child health Care hospital, Al Ahsa, Saudi Arabia.

All the nursing and Paramedical female staff working in Maternity and Child care Hospital were the study population which was around 600 according to the Pay roll register of the hospital

The sample size was calculated using a Fisher"s formula by cited by Mugenda&Mugenda (1999);

$$n = Z^2pq / e^2$$

n = the desired sample size

Z = the standard normal deviate at 95% confidence level (1. 96)

P = the estimated proportion of the target whose awareness score was 16% [1].

q = 1-p

e = desired level of precision (0. 05)

$$n = \frac{(1.96)^2(0.55)(0.45)}{(0.05)^2} = 380$$

n = 380 staffs. Since the target population was less than 10, 000, and finite in nature; 600 staffs in total, a final sample estimate will be was calculated using the formula:

$$n = \frac{n_0}{1 + \frac{(n_0 - 1)}{N}}$$

Where n is the sample size, N is the population size and no is the calculated sample size for infinite population.

n= 380/ 1+ (380-1)/600 = 233. 57 (234) participants A ten percent of the calculated sample size was added to cater for non-response i. e. 10% of 235 = 23 + 234 = 257 Thus, the total sample size will be 257 participants.

The questionnaires were pre-tested by a pilot study on a selected sample (5% of the sample size) of 12 staffs in MCH hospital. The participants of the pilot study were not being included in the main study. All the procedures expected in the main study were followed in the pilot study. Every second female nursing and paramedical staffs from the Pay roll sheet of the hospital will be selected for the study sample till the sample size is achieved. All the staffs of study sample were distributed with a predesigned, pretested, self-administered multiple response questionnaires with a mixture of closed, open ended and questions with 5 point likert scale graded response. The questionnaire items consisted of four sections. Section 1 consisted of demographic information (such as age, marital status, educational qualification and occupation). Section 2 consisted of the questions on knowledge of pap smear test such as its importance, which age group should go for Pap smear test, Pap test's usefulness in detecting the pre-cancer of cervix, purpose of pap smear test, how is it perfumed etc. There were 10 questions in the knowledge section. The answer was graded in 5 point likert scale. Correct answer was awarded with 1 score while incorrect with zero score. Total score ranged from 0 to 10 (mean: 9. 87; SD: 3. 03) had been generated, the higher the score the higher the knowledge about the Pap smear test. By using the mean as a cutoff point to determine the level of knowledge, the participants were classified as having poor knowledge and good knowledge on the score range of 0 to 10 points. A good knowledge score range was between 6 to 10 points while lower than 6 was considered as poor knowledge. Section 3

contained questions on the attitude of participants towards pap screening test. There were 5 questions in this section. The correct answer for each question was coded as 1 point while the incorrect answer was coded as 0 point. The total attitude score had to be calculated by summing up the 5 questions, the higher the score the higher the attitude toward the Pap smear test. The total attitude score had a range from 0 – 5 points (mean: 3.47; SD: 1.27) and by using the mean as a cutoff point to determine the level of attitude. The participants were classified as having negative attitude by the score range of 0 – 3 points, while positive attitude was classified by the score range of 4 – 5 points. Section 4 of the questionnaires were aimed to measure participants' practice on Pap smear test which consisted of 5 questions. The correct answer for each question was coded as 1 point while the incorrect answer was coded as 0 point. The total practice score was to be computed by adding up the 5 questions and a total score range from 0 – 5. A mean (3.47; SD: 1.27) was generated. Participants' were classified as having low practice by the score range of 0 to 3 points whereas good practice was classified by the score range of 4 to 5 points. For calculation agree and strongly agree was grouped as agree while neutral, disagree and strongly disagree was grouped as disagree in the likert scale. The approval was taken from the ethical committee of Maternity and Child Hospital, Al Ahsa before starting the research. Consent of the participants were also taken.

The data were entered and analyzed by using the statistical package for social sciences, version 21 (SPSS, Chicago, IL, USA). Descriptive statistics was presented using counts, proportions (%), mean  $\pm$  standard deviation whenever appropriate. The comparison between the knowledge, attitude and practices (KAP) score was performed using chi square test. A correlation procedure of knowledge, attitude and practice score will also be conducted to determine the linear relationship of each KAP score. A p-value cut off point of 0.05 at 95% CI was used to determine statistical significance.

### 3. Results

A total of 217 out of 258 staffs responded the online questionnaires making the response rate of 85%. The mean age of the participants was  $32.83 \pm 7.20$  Std. Dev. (Range 21-61 years). Majority of the participants (N= 180, 82.9%) were married while fourteen percent (N=30) and three percent (N=7) were unmarried and widow respectively. Seventy percent of the participants (N=152) were staff nurse followed by X ray technician eight percent (N=18). Operation Room Technician, IT technician and Lab technician constituted 7.4% (N=16), 7.4% (N=16), and 6.9% (N=15) respectively. Sixty four percent of the participants were graduate (N=139) while thirty three percent diploma (N=71) and only three percent (N=7) were postgraduate. The detail of the Socio demographic characteristics is shown in table 1.

**Table 1** Socio demographic characteristic of the participants

Variables	Number	percentage
<b>Age</b>		
32.83 $\pm$ 7.20 Std. Dev. (Range 21-61 years)		
<b>Marital status</b>		
Unmarried	30	13.82
Married	180	82.95
Widow	7	3.23
Total	217	100
<b>Occupation</b>		
Staff nurse	152	70.05
X-ray technician	18	8.29
OR technician	16	7.37
IT technician	16	7.37
Lab technician	15	6.92
Total	217	100

<b>Education</b>		
Diploma	71	32.72
Graduate	139	64.06
Postgraduate	7	3.22
total	217	100

### 3.1. Assessment of Knowledge

More than eighty seven percent of the participants (N=190) were aware of the fact that Pap smear test of the cervix is the most helpful way to detect pre cancer and cancer of cervix. Forty five percent of the participants(N=98) agreed that Women(25 to 29 years old) should have pap smear test at least every three years. Almost fifty nine percent of the participants (N=128) agreed with the statement that pap smear test is not able to detect precancerous cells before manifestation of its symptoms. Majority of the participants (N=191, 88%) agreed with the statement that the purpose of pap smear test is to detect abnormal cells in the cervix. However only thirty percent of the participants (N=65) disagreed that Pap smear test is not successful in reducing the incidence and mortality of cervical cancer. More than fifty five percent of the participants (N=122) were of the opinion that pap smear test is able to detect HPV (causative virus for cervical cancer) in the cervical cells. Almost sixty one percent of the participants (N=132) correctly narrated that Pap smear test is non-invasive type of test. On the statement that Women should have Pap test since the onset of sexual activity, more than sixty four percent of the participant (N= 139) disagreed with this statement. Almost seventy two percent of the participants (N=156) did not agree with the statement that Pap smear test can detect all types of genital cancer. Only twenty eight percent of the participant (N=60)agreed with the statement that Pap smear test can be performed at both menstrual and non-menstrual period. The details of knowledge response is shown in table 2.

**Table 2** Response of knowledge questionnaires

Questions on knowledge	Agree No. (%)	Stronglyagree	Neutral	Disagree	Strongly disagree
Pap smear test of the cervix is the most helpful way to detect pre cancer and cancer of cervix	100(46.08)	90(41.47)	21(9.68)	0	6(2.77)
Women(25 to 29 years old) should have pap smear test at least every three years	60(27.65)	38(17.51)	45(20.74)	74	0
Pap smear test is not able to detect precancerous cells before manifestation of its symptoms	59	69	25	63	0
The purpose of pap smear test is to detect abnormal cells in the cervix	130	61	19	7	0
Pap smear test is not successful in reducing the incidence and mortality of cervical cancer	137	13	32	28	7
Pap smear test is able to detect HPV (causative virus for cervical cancer) in the cervical cells	86	36	59	34	2
Women should have Pap test since the onset of sexual activity	51	27	25	99	15
	Yes	No			
Pap smear test is non-invasive type of test	132	85			
Pap smear test can detect all types of genital cancer	61	156			
Pap smear test can be performed at both menstrual and non-menstrual period	60	157			

### 3.2. Response on attitude questions

As far as the attitude of the participants towards Pap smear test is concerned, more than fifty percent (53%, N=115) of the participants agreed that only Pap smear test is not enough to detect cervical cancer, Needs more tests. The percent and number of participants who disagreed that Pap smear is unnecessary if there is no signs and symptoms was seventy seven percent(N=164). Similarly almost eighty five percent(N=184) disagreed that they were afraid that something wrong will be detected if theygo for Pap smear test. Seventy two percent of the participants (N=157) did not agree with the statement that It is not necessary to inform every married women attending the gynae clinic about Pap smear test. Minority of the participants (26%, N=57) agreed with the statement that no need of Pap smear test after menopause. The details of the response on attitude questions is shown in Table 3

**Table 3** Response on attitude questions

Questions on attitude	Responses				
	Agree	Strongly agree	Neutral	Disagree	Strongly disagree
Only Pap smear test is not enough to detect cervical cancer, Needs more tests	87	28	49	45	8
Pap smear is unnecessary if there is no signs and symptoms	41	10	43	100	23
I am afraid that something wrong will be detected if I go for PAP	26	7	61	101	22
It is not necessary to inform every married women attending the gynae clinic about Pap smear test	55	5	13	132	12
No need of Pap smear test after menopause	51	6	39	100	21

### 3.3. Response of practice questions:

Ninety percent of the participants (N=198) did not have Pap smear test done and sixty three percent who went for pap smear test was done for one time while the rest for 2 times. Seventy one percent (N=153) of those participants who did not go for pap smear test cited no recommendation by any doctors as the main reason while 6. 5%(N=14) of the participant felt embarrassment as the reason for not going for the test. Almost five percent (N=10) of them felt that lack of knowledge about the Pap smear is the main reason. Lack of time and fear of the test result were the main reasons for not undergoing Pap smear test among 6. 9 %( N=15) and 4. 15% (N=9) respectively. More than eighty nine percent (N=194)of the participants did not agree with the statement that If a woman has normal pap smear test, she does not need Pap smear in the future and Eighty three percent (N=180)of the participant agree that Women should not have sex before 24 hours of pap smear test. Majority of the participants(64. 1%, N=139) found it true that women less than 21 years old don't need Pap smear screening and more than fifty two percent of the participant (N=113)agree with the statement that Woman with hysterectomy do not require Pap screening test. The detail on the response on practice questions is shown in table 4.

**Table 4** Response on practice questionnaires

Questions onpractice	Response	
	Yes	No
	N (%)	
Did you have papsmear done	21(9. 68)	198
<b>The reasons why did not go for Pap smear test: (N=198)</b>		
Did not havepapsmear done due to	132(66. 67)	
No recommendation by any doctors	10(5. 05)	
Lack of knowledge about the Pap smear	16(8. 08)	

Embarrassing	14(7.07)	
Lack of time	15(7.58)	
Fear of the test result	11(5.55)	
If a woman has normal pap smear test, she does not need Pap smear in the future	23(10.59)	194(89.40)
Women should not have sex before 24 hours of papsmear test	180(82.94)	37(17.05)
If you are less than 21 years old you don't need Pap smear screening	139(64.056)	78(35.94)
Woman with hysterectomy do not require Pap screening test	113(52.07)	104(47.93)

Knowledge, Attitude and Practice score and their association with the sociodemographic characteristics.

The mean knowledge of the participants was  $6.31 \pm 3.24$  Std. Dev. (Range: 2 -10). More than fifty percent of the participant (N=109) did not have good knowledge about Pap smear test. The mean of positive attitude score was  $3.56 \pm 1.19$  Std. Dev. (Range: 00-5). Fifty eight percent of the participant (N=128) had positive attitude towards Pap smear test. The mean of practice score was  $1.21 \pm 1.00$  Std. Dev. (Range: 00 - 4). Sixty eight percent of the participants (N=191) did not have good practice towards pap smear test. There was no significant difference of knowledge score among the different occupation of the medical staffs (P=0.214). However the attitude of staff nurses was significantly positive (p=0.024) than those of other medical staffs. The practice of the medical staffs towards the Pap smear test was significantly negative (P=0.000) than those of other medical staff. There were no significant difference in the knowledge, attitude and practice score between different age groups and marital status of the participants. The details of the KAP score and their association with the socio demographic characteristics is shown in table 5.

**Table 5** Knowledge, attitude and practice scores and their significance with different variables of the participants. knowledge, attitude and practice scores and their significance with different variables of the participants.

Variables	Good N{}	Poor N (%)	P-Value
Knowledge about pap smear screening Mean $6.31 \pm 3.24$ Std. Dev. (Range: 2 -10)	108 (49.77)	109(50.23)	
<b>Age group</b>			
20-30	42 (19.35)	41(18.89)	0.201
31-40	60 (27.65)	62(28.57)	
41-50	5(2.34)	6(2.76)	
51-60	1(0.46)	0(0.0)	
<b>Marital Status</b>			
Unmarried	13(5.99)	17(7.83)	0.67
Married	93(42.86)	87(40.09)	
Widow	2(0.92)	5(2.30)	
<b>Occupation</b>			
Staff nurse	75(34.56)	77(35.48)	0.024
X ray Technician	11 (5.07)	7 (3.23)	
IT technician	10 (4.61)	6(2.76)	
OR technician	4 (1.84)	12(5.53)	
Lab technician	8(3.69)	7(3.23)	
<b>Education</b>			

Diploma	35(16.13)	36(16.59)	0.32
Graduate	68(31.34)	71(32.72)	
Post graduate	5(2.30)	2(0.92)	
<b>Attitude;</b> Mean Score 3.56 ±1.19 Std. Dev. (Range: 00-5)			
<b>Age group</b>			
20-30	43(19.81)	40(18.43)	0.233
31-40	62(28.57)	60(27.64)	
41-50	7(3.23)	4(1.84)	
51-60	1(0.46)	0(0.0)	
<b>Marital Status</b>			
Unmarried	15(6.91)	15(6.91)	0.654
Married	90(41.47)	90(41.47)	
Widow	3(1.38)	4(1.84)	
<b>Occupation</b>			
Staff nurse	81(37.33)	71(32.72)	0.001
X ray Technician	8 (3.69)	10(4.61)	
IT technician	7(3.23)	9(4.15)	
OR technician	5(2.30)	11(5.07)	
Labtechnician	3(1.38)	12(5.53)	
<b>Education</b>			
Diploma	35(16.13)	36(16.59)	0.507
Graduate	68(31.34)	71(32.72)	
Post graduate	5(2.30)	2(0.92)	
<b>Practice;</b> Mean score 1.21 ±1.00 Std. Dev. (Range: 00 – 4)			
<b>Age group</b>			
20-30	42(19.35)	41(18.89)	0.773
31-40	58(26.73)	64(29.49)	
41-50	5 (2.30)	6(2.76)	
51-60	1(0.46)	0(0.0)	
<b>Marital Status</b>			
Unmarried	23(10.60)	7(3.23)	0.038
Married	99 (45.62)	81(37.32)	
Widow	4(1.84)	3(1.38)	
<b>Occupation:</b>			
Staff nurse	10 (4.61)	142(65.44)	
X ray Technician	5(2.30)	13(5.99)	



IT technician	2(0. 92)	14(6. 45)	0. 00
OR technician	7(3. 23)	9(4. 15)	
Labtechnician	2(0. 92)	13(5. 99)	
<b>Education</b>			
Diploma	35(16. 13)	36(16. 59)	0. 71
Graduate	70(32. 26)	69(31. 80)	
Post graduate	3(1. 38)	4(1. 84)	

#### 4. Discussion

The present research was an attempt to ascertain the level of knowledge, attitude and practice of the medical staffs towards the Pap smear screening test working in one of the largest tertiary Maternity and Child hospital of Al Ahsa region of Saudi Arabia. This study has found that more than fifty percent of the staffs had good knowledge about the Pap smear screening test which is lower than that of the similar study done in India (88% [8]). A high level of knowledge among nurses was also documented in studies done in a tertiary hospital of Nigeria [12], Dominica (70%) [13], Spain (85%) [14], Thailand (90. 9%) [15], Turkey (50. 3%) [16] and India (85%) [1]. However a comparatively low level of awareness regarding Pap smear screening test was detected among the health workers in an Iranian (25%) [17], Chinese (46. 9%) [18], Jordanian (47. 2%) [19] Study where less than fifty percent of health care workers had proper knowledge. In an Uganda study also the researchers have found that 60% of the participant health workers had adequate knowledge [20].

More than eighty seven percent of the participants in our study were aware of the fact that Pap smear test of the cervix is the most helpful way to detect pre cancer and cancer of cervix. Nigerian (92. 2%) [12], Thailand [15], Dominica (72. 73%) [13], Saudi Arabia (86. 8%) [21] and Spain (98. 3%) [14] Studies have also shown a high level of awareness regarding the usefulness of Pap smear screening test. However low level of awareness among the health workers have been found in Ethiopian (35. 8%) [29]. More than eighty six percent of the female health care staffs believed that Pap smear test is a useful test for the detection of cervical cancer in a Saudi study [21].

Only forty five percent of the participant in our study agreed with the statement that women(25 to 29 years old) should have Pap smear test at least every three years which is lower than that observed in Iran<sup>[17]</sup>(83. 8%), Indian (83. 8%) [1] and Turkey (56%) [16]. Majority of the nurses were aware of the correct time to start screening which is after first coitus (37%) but very few were aware of the recommended screening after 3 years (10%) in a Pakistani Study [22].

Fifty eight percent of the participant in our study had positive attitude towards Pap smear test. High rate of positive attitude was observed in Nigerian study [12] where the mean of the attitudes of the respondents about Pap screening was between 4. 39 and 4. 81 on a Likert Scale of 1-5. Uganda study [20] has also found that 66% of the health workers had positive attitude towards Pap smear screening test i. e. , they scored equal or above mean ( $\geq 56$  out of 65). Similarly a very high score of positive attitude (97. 5%) was reported among the nursing staffs of western Indonesian hospitals towards performing Pap smear test for the early detection of cervical cancer [23].

In our study low practice (32%. Mean practice score  $2. 21 \pm 1. 00$  Std. Dev. ) has been recorded on Pap smear screening test. Low practice score towards Pap smear screening test was also found among the nursing staffs of a teaching hospital of Spain [14]. In Nigerian study [12] also the practice score towards Pap smear test screening was documented as mean of 2. 89 on a Likert Scale of 1-5. Similar result was found in the Turkey study [16] where only 4. 2% of the participants had good practice on Pap smear screening test.

Despite the fact that more than fifty percent of the medical staffs had good knowledge and positive attitude, ninety percent of them (N=198) did not have Pap smear test done in our study. No recommendation by any doctors (71%), embarrassment (6. 5%), lack of knowledge about the Pap smear (5%), lack of time (6. 9%) and fear of the test result (4. 15%) were the main reasons for such a low intake. However in a similar study in other part of Saudi Arabia<sup>[24]</sup> researchers have found 26. 2% uptake for pap smear screening among the health care workers. The Pap smear screening was also low (11. 6%) in Indian study [26] and lack of symptoms (58. 4%), Lack of counseling (42. 8%) and no recommendation by the physician (29. 9%) were blamed as the main reasons for non-participation in the screening. Only 5. 7% of the participants had ever undergone Pap smear test in Nigerian study also, where the reasons for such a low uptake was found to be no reason for not screening (37. 1%), fear of test result (15%) and the perception that they

were not likely candidate of the cancer of cervix (25%). Ugandan study [20] has also found a low level of Pap screening test (9%) among the participants health workers. However, as high as thirty five percent of the participants in Malaysian study [9] had Pap smear screening done? Barrier to Pap smear screening was also documented in Dominican study [13] where only 11. 24% of the participants underwent Pap smear screening and the reasons for this low screening test was found to be perception of healthiness(69. 62%, embarrassment(1. 27%) and high cost of screening (29. 11%). Thailand study [13] also revealed that the most frequent reasons for avoiding **Pap smear** screening were fear of vaginal examination (27. 6%), embarrassment (26. 3%), lack of any symptoms (22. 4%) and being busy (17%). Low uptake (27. 1%) of Pap smear test has also been reported in an Iranian [17] and Ethiopian (study( 12%) [29]. There was no significant difference in the knowledge, attitude and practice score between different age groups and marital status of the participants. However in South African study women of older age had higher knowledge scores (AOR = 2. 5 for a 5-point increase in knowledge score; 95% CI: 1. 0-6. 3; P = 0. 051) [27].

However the attitude of staff nurses was significantly positive ( $p=0. 024$ ) than those of other medical staffs in our study but positive attitude and good knowledge did not translate into good practice in most of them. The same result was shown in an India<sup>[11]</sup> study where eighty five percent of the urban nurses had positive attitude which was higher than the other paramedical staffs but the practice for screening was low.

The practice of the technicians towards the Pap smear test was significantly negative ( $P=0. 000$ ) than those of nurses in the present study. The reverse was true in the Ethiopian study [29] where physicians and nurses were 88% less likely to be screened for cervical cancer than other health care workers (adjusted odds ratio [AOR] =0. 12, 95% CI: 0. 02, 0. 79).

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## 5. Conclusion

This study has demonstrated a moderate level of knowledge and attitude among the paramedical and nursing staffs of Maternity and Child Hospital towards Pap smear screening test. However good knowledge and attitude did not translate into good practice in most of them especially among the nursing staffs. The rate of uptake for Pap smear test was low. The major reason for low uptake of Pap smear screening among the respondents include, no recommendation by any doctors, embarrassment, lack of knowledge about the Pap smear, lack of time and fear of the test result.

### *Recommendation*

Based on the findings in this study, the recommendations are:

- Increase national campaign to raise awareness about Pap smear screening test
- Needs to arrange more symposiums and work shop in hospital setting to increase the practice of Pap smear screening among hospital staffs
- Needs to organize Pap smear screening day targeted for “at risk” women
- Needs to develop national policy/guidelines for Pap smear screening.

### *Limitations of the study:*

- Self-reported behaviors in this study can be overestimated and so knowledge, attitude quoted in this study may have been overestimated.
- The study was done on a small sample so the result of this study can not be generalized

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## Compliance with ethical standards

### *Disclosure of conflict of interest*

No conflict of interest to be disclosed.

### *Statement of informed consent*

Informed consent was obtained from all individual participants included in this study

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## Data Collecting Form

### Section 1: Demographic characteristics

- Age: years
- Marital status: [1]Unmarried [2] Married [3]Divorced [4] widow
- Educational qualification : [1] Diploma [2] Bachelor degree [3] Post-graduate
- Occupation: [1] Mid wife [2] Staff nurse [3] Head nurse [4] X-ray technician [5] OR technician [6] IT technician [7] Others

### Section 2; Questionnaires on the knowledge about Pap smear test

- Pap smear test of the cervix is the most helpful way to detect pre cancer and cancer of cervix [1] Strongly agree [2] agree [3] Neutral [4] Disagree [5] Strongly disagree
- Women(25 to 29 years old) should have pap smear test at least every three years

- [1] Strongly agree [2] agree [3] Neutral [4] Disagree [5] Strongly disagree
- Pap smear test is not able to detect precancerous cells before manifestation of its symptoms  
[1] Strongly agree [2] agree [3] Neutral [4] Disagree [5] Strongly disagree
- The purpose of pap smear test is to detect abnormal cells in the cervix  
[1] Strongly agree [2] agree [3] Neutral [4] Disagree [5] Strongly disagree
- Pap smear test is not successful in reducing the incidence and mortality of cervical cancer  
[1] Strongly agree [2] agree [3] Neutral [4] Disagree [5] Strongly disagree
- Pap smear test is able to detect HPV (causative virus for cervical cancer) in the cervical cells  
[1] Strongly agree [2] agree [3] Neutral [4] Disagree [5] Strongly disagree
- Pap smear test is non-invasive type of test  
[1] Yes [2] No [3] don't know
- Women should have Pap test since the onset of sexual activity  
[1] Strongly agree [2] agree [3] Neutral [4] Disagree [5] Strongly disagree
- In pap smear test the cervical cells are examined  
[1] Yes [2] No
- Pap smear test can be performed at both menstrual and non-menstrual period  
[1] Yes [2] No

### Section 3: Questionnaires on attitude towards Pap smear test

- Only Pap smear test is not enough to detect cervical cancer, Needs more tests  
[1] Strongly agree [2] agree [3] Neutral [4] Disagree [5] Strongly disagree
- Pap smear is unnecessary if there is no signs and symptoms  
[1] Strongly agree [2] agree [3] Neutral [4] Disagree [5] Strongly disagree
- I am afraid that something wrong will be detected if I go for PAP  
[1] Strongly agree [2] agree [3] Neutral [4] Disagree [5] Strongly disagree
- It is not necessary to inform every married women attending the gynae clinic about Pap smear test  
[1] Strongly agree [2] agree [3] Neutral [4] Disagree [5] Strongly disagree
- No need of Pap smear test after menopause  
[1] Strongly agree [2] agree [3] Neutral [4] Disagree [5] Strongly disagree

### Section 4: Questionnaires of Pap smear test practice

- Did you have papsmear done  
[1] Yes [2] No  
If yes
  - Number of times Pap smear test done
- If no Reasons
  - No recommendation by any doctors
  - Lack of knowledge about the Pap smear
  - Negligence despite having knowledge about Pap smear
  - Embarrassing
  - Lack of time
  - Fear of the test result
- If a woman has normal pap smear test, she does not need Pap smear in the future  
[1] Yes [2] No [3] I don't know
- Women should not have sex before 24 hours of pap smear test  
[1] Yes [2] No [3] I don't know
- If you are less than 21 years old you don't need Pap smear screening  
[1] True [2] false
- Woman with hysterectomy do not require Pap screening test  
[1] True [2] False