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KNOWLEDGE AND ATTITUDE TOWARD CERVICAL PAP SMEAR AMONG WOMEN ATTENDING PRIMARY HEALTH CARE CENTERS: A CROSS-SECTIONAL STUDY IN TAIF, SAUDI ARABIA

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Abstract:
Background: *Cervical cancer is a prevalent disease that is a leading source of morbidity and mortality in women across the world, although it is preventable, diagnosed early, and highly treatable.*
Study aim: *The aim of this study was to assess the knowledge and attitudes of women attending PHCCs for cervical pap smear. The study included 382 women, of which 63.9% were married.*
Methods: *An observational, cross-sectional study was implemented using a self-administered questionnaire based on PHCCs attendance. The target population of this study were women attending PHCCs, Taif, Saudi Arabia. We distributed a self-administed questionnaire that was adapted from a previous study. The questionnaire collected data about sociodemographic characters, as well as questions assessing knowledge and awarenss of participants towards cervical Pap smear. Consted was obtained from all participants after explaining the aim of the study.*
Results: *Our study found that 62.3% did not hear about pap smear previously, and the remaining [37.7%] heard about it mostly through Gynecologist/family doctor [13.1%]. Over a half [62%] of participants did not know when to start doing Pap smear, and only 18,1% answered correctly as after marriage. The majority [83.5%] of women did not know how frequently they should do Pap smear, and only 4.7% answered correctly as every three years. Similarily, the majority [85.9%] did not know when to stop doing the Pap smear screening, and only 6.8% answered correctly as at the age of 65 years. Moreover, 85.9% did not know the difference between Pap smear and high vaginal swap. The study found a significant association between having heard about Pap smear and level of education [P=0.017], and profession [P=0.015]. More subjects reported subjective knowledge among university graduates [45.1%], and employee [53%]. Profession was also significantly associated [P=0.008] with an attitude item that is to ask the physician to take a cervical Pap smear, as more employee [15.2%] always did so.*
Conclusion: *Our study revleaed that there is a relatively low level of knowledge towards cervical Pap smears among PHCC visitors in Taif, Saudi Arabia. The most common source of knowledge was the gynecologist in a healthcare setting. The majority of women are interested to know more about cervical Pap smear. We recommend more awareness program to be conducted among the general public in Taif, Saudi Arabia targeting adult and married women.*

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INTRODUCTION:

Cervical cancer [CC] is the 4th most common cancer and also the 4th leading cause of cancer-related deaths among women worldwide [1]. According to WHO reports in 2018, approximately 311 000 women died from cervical cancer; more than 85% of these deaths occurring in low- and middle-income countries[2].

In Saudi Arabia, CC is ranking as 7th most common cancer amongst women in the 45- to 59-year age group and accounts to 2.3% of all cancers[3]. Moreover, new cases of cervical cancer were estimated at 316 and deaths estimated at 158 annually in Saudi Arabia 2018[4].

The main cause of CC is attributed to human papilloma varies [HPV], HPV 16 and 18 are the most common subtypes whish responsible for most of the CC worldwide[5]. There are multiple common risk factors associated with CC worldwide consist of sexual transmitted disease, reproductive and sexual factors, behavioral factors, and host factors[6]. In the majority of cases, women with CC present with no symptoms while the frequent sign of CC is Abnormal vaginal bleeding and discharge.

CC is a preventable disease and curable as it is at pre-invasive stage, which can be primary prevented by HPV vaccines and detected early by routine cervical screening. Early detection and treatment of CC through screening programs significantly reduce the morbidity and mortality of this disease[7]. Wherefore, the several studies refer to decline of the CC incidence by roughly 70-80% in developed countries which has intensive cervical cancer screening programs and awareness [that is, Pap smear][8][9][10][11].

The Pap smear is a cytology-based Papanicolaou test that can be done in the office and has ability to detect pre-invasive as well as invasive disease lesions at early stages of the clinical course, during which can be prevented and treated effectively before worsening[12]. However, public awareness of this test especially in developing countries is limited[13].

In Saudi Arabia, an intensive screening program for cervical cancer is not well established, which result in increased the incidence of the disease over the past two decades[14]. Moreover, most of the CC cases in Saudi Arabia present at advance stages which result in adverse outcome and this is result of lack knowledge and awareness regarding CC screening[15]. Wherefore, activating screening program and increased awareness will help to overcome this issue.

Several studies have been conducted to assess knowledge toward cervical pap smear or CC[16][17][18][19][20]. In Saudi Arabia, generally there are few numbers of studies that conducting to assess knowledge, attitude and awareness regarding CC screening and pap smear[12][14]. Moreover, up to our knowledge, there is no study conducting in the city of TAIF observing women attending PHCCs. Therefore, this study conducted to assess Knowledge and attitude toward cervical pap smear among women attending PHCCs in Taif city, Saudi Arabia.

Rational:

The cervical cancer in women worldwide is not rare. More awareness and knowledge about cervical pap smear in Saudi Arabia is required. Hence, this study was undertaken to explore the level of knowledge and attitudes in the women attending PHCCs about cervical pap smear.

Aim:

To assess the knowledge and attitudes of women attending PHCCs for cervical pap smear.

Objectives:

Primary objectives:

- To evaluate the knowledge of women attending PHCCs for cervical pap smear.
- To evaluate the attitudes of women attending PHCCs for cervical pap smear.

Secondary objectives:

- To assess associated factors [demographics] that affects the prominent knowledge and attitude items of women attending PHCCs for cervical pap smear.

MATERIALS AND METHODS:

Study design:

An observational, cross-sectional study was implemented using a self-administered questionnaire based on PHCCs attendance.

Study population:

The target population of this study were women attending PHCCs, Taif, Saudi Arabia.

Selection criteria:

Study inclusion criteria:

- Women in reproductive age group [18-49 year] who attending PHCCs.
- Having fair cognitive skills.

Study exclusion criteria:

- Male attending PHCCs.
- Women with Impaired cognitive skills.

Study setting:

Taif city is one of Makkah governates in Saudi Arabia, it located at highs above the sea of 1,879m on the slops of 'Sarawat' mountains. Taif city has an estimated population of 688,693 people, making it the 6th most populous city in the kingdom. There are 19 PHCCs inside the Taif city and distributed on 4 administrative sectors.

Sample size:
A previous study yielded a percentage knowledge score of the women who had heard about the Pap smear was [53.9%] [12] . We compute the minimal sample size required at a confidence limit of 95% and accepting a difference of up to 5% of the true population using the following:

$$n = \frac{Z^2 \pi[1-\pi]}{D^2}$$

$$n = \frac{1.96^2 \text{ x } 0.539[1-0.539]}{[0.05]^2} = 381.822 \sim 382$$

Sampling technique:
We implemented several stages for our sampling technique. First, all four administrative sectors were included as our sample strata. Then, one PHCC was selected at random from all the PHCCs belonging to each administrative sector. Finally, we performed systematic sampling selecting every 2nd woman attending the PHCCs for any reason during March 2021 to April 2021. The sample populations were distributed over the selected centers, proportionally according to numbers of attendants.

Data collection tool [instruments used]:
We used a self-administered questionnaire adopted from a previous study[12]. The questionnaire consisted of 3 functional domains addressing demographic data as well as questions regarding knowledge and attitudes related to pap smear. The demographic data included age, marital status, nationality, Educational level, and Profession. Questionnaires were distributed during study period conducted in Arabic or English.

Data collection technique:
The investigator distributed the questionnaire to the target population by herself and she was available during the distribution of the questionnaire for consent obtaining as well as any clarification. The data was verified by hand then was coded and entered to a personal computer.

Data management and analysis plan:
The data was coded and input into a computer using the Epi-data 3.1 statistical software, then exported to the Statistical Package for Social Scienes [SPSS] Version 26 for appropriate analysis. To reduce entry errors and to check for outliers and missing values, the data was processed and cleaned. Then, using the SPSS version 26 software, descriptive statistics such as frequency, and percentage were calculated for the study variables. Chi-square test was used for inferential statistics where the threshold for signifigance was set at $p < 0.05$.

Ethical Considerations:
Research approval was obtained from the regional Research and Ethical Committee in Taif, KSA. Permission from PHCCs before conducting project was obtained. Individual consent form was filled by participants in the questionnaire. Patient confidentiality was always maintained.

RESULTS:

Table 1: Demographic data for all participants [n=382]

Demographic variable		Frequency	Percent %
Age	Less than 20	37	9.7
	20-29	123	32.2
	30-39	105	27.5
	40-49	117	30.6
Marital Status	Single	100	26.2
	Married	244	63.9
	Divorced	19	5.0
	Widowed	19	5.0
Nationality	Saudi	311	81.4
	Non-saudi	68	17.8
Level of education	Illiterate	15	3.9
	Up to secondary school	81	21.2
	High school	92	24.1

	College and higher degrees	193	50.5
Profession	Employee	66	17.3
	Student	64	16.8
	Housewife	250	65.4

Table 2: knowledge of all participant toward pap smear [n=382]

Knowledge related Questions		**Frequency**	**Percent %**
Have you ever heard about pap smear?	Yes	144	37.7
	No	238	62.3
If [yes], how did you know about pap smear?	Gynecologist/family doctor	50	13.1
	Friends	33	8.6
	Media	36	9.4
	Health publication.	16	4.2
	Lectures/conferences	9	2.4
Do you know when to start doing pap smear?	Yes	140	36.6
	No	237	62.0
If [yes], please indicate when?	After marriage	69	18.1
	At 30 years of age	33	8.6
	At 40 years of age	39	10.2
Do you know how frequently you should do pap smear?	Yes	63	16.5
	No	319	83.5
If [yes], please indicate how frequently?	Every 6 months	21	5.5
	Every 1 year	21	5.5
	Every 3 years	18	4.7
Do you know when to stop doing pap smear?	Yes	52	13.6
	No	328	85.9
If [yes], please indicate when?	At 50 years of age	26	6.8
	At 60 years of age	16	4.2
	At 70 years of age	10	2.6
Do you know the difference between pap smear and high vaginal swap?	Yes	52	13.6
	No	328	85.9

Table 3: Attitude of all participant toward pap smear [n=382]

Attitude related Questions		**Count**	**Percent %**
Have you ever advised your family/relatives/friends to do Pap smear?	Sometimes	56	14.7
	Always	32	8.4
	Never	294	77.0
Do you ask your physician to do Pap smear?	Sometimes	25	6.5
	Always	24	6.3
	Never	330	86.4
Are you interested in knowing more information about Pap smear?	Yes	289	75.7
	No	93	24.3

Table 4: Factors associated with having heard about Pap smear [n=382]

Parameter		**Hearing about Pap smear**		**P-value**
		Yes	**No**	
Age, y	**Less than 20**	11 [29.7%]	26 [70.3%]	0.176
	20-29	39 [31.7%]	84 [68.3%]	
	30-39	45 [42.9%]	60 [57.1%]	
	40-49	49 [41.9%]	68 [58.1%]	
Marital Status	**Single**	31 [31%]	69 [69%]	0.145

	Married	98 [40.2%]	146 [59.8%]	
	Divorced	10 [52.6%]	9 [47.4%]	
	Widowed	5 [26.3%]	14 [73.7%]	
Nationality	**Saudi**	117 [37.6%]	194 [62.4%]	0.895
	Non-saudi	25 [36.8%]	43 [63.2%]	
Level of education	**Illiterate**	3 [20%]	12 [80%]	**0.017**
	Up to secondary school	24 [29.6%]	57 [70.4%]	
	High school	29 [31.5%]	63 [68.5%]	
	College and higher degrees	87 [45.1%]	106 [54.9%]	
Occupation	**Employee**	35 [53%]	31 [47%]	**0.015**
	Student	20 [31.3%]	44 [68.8%]	
	Housewife	88 [35.2%]	162 [64.8%]	

Table 5: Factors associated with having asking the physician to do a Pap smear [n=382]

Parameter		**Asking physician to do a Pap smear**			**P-value**
		Sometimes	**Always**	**Never**	
Age, y	**Less than 20**	4 [10.8%]	2 [5.4%]	31 [83.8%]	0.229
	20-29	4 [3.3%]	4 [3.3%]	114 [93.4%]	
	30-39	8 [7.6%]	7 [6.7%]	90 [85.7%]	
	40-49	9 [7.8%]	11 [9.6%]	95 [82.6%]	
Marital Status	**Single**	5 [5.1%]	4 [4.1%]	89 [90.8%]	0.663
	Married	17 [7%]	18 [7.4%]	209 [85.7%]	
	Divorced	1 [5.3%]	2 [10.5%]	16 [84.2%]	
	Widowed	2 [11.1%]	0 [0%]	16 [88.9%]	
Nationality	**Saudi**	21 [6.8%]	21 [6.8%]	267 [86.4%]	0.727
	Non-saudi	4 [5.9%]	3 [4.4%]	61 [89.7%]	
Level of education	**Illiterate**	0 [0%]	0 [0%]	15 [100%]	0.708
	Up to secondary school	5 [6.3%]	5 [6.3%]	70 [87.5%]	
	High school	6 [6.5%]	4 [4.3%]	82 [89.1%]	
	College and higher degrees	14 [7.3%]	15 [7.8%]	163 [84.9%]	
Profession	**Employee**	6 [9.1%]	10 [15.2%]	50 [75.8%]	**0.008**
	Student	6 [9.5%]	4 [6.3%]	53 [84.1%]	
	Housewife	13 [5.2%]	10 [4%]	226 [90.8%]	

The study included 382 women. Table 1 shows that the highest percent of total sample was [20-29 years] in age group by 32.2% of the total sample, followed by 30.6% for [40-49 years], 27.5% for [30-39 years] and 9.7% for [less than 20 years]. About marital status, the highest percent of total sample were married by 63.9%, while single were 26.2% of total sample and 5% of total sample for both divorced and widowed women. Of all, 81.4% of total sample were Saudis and the rest was non-Saudi by 17.8% of total sample. Regarding education level, the highest present was for [College and higher degrees] by 50.5% of the total sample, followed by [High school] with 24.1% of the total sample, while 21.2% of the total sample were [up to secondary school] and 3.9% for illiterate. Among participants, the highest percent were housewife by 65.4% of the total sample, followed by 17.3% and 16.8% for employee and student respectively.

Table 2 shows the knowledge of all participant toward pap smear. A total of 238 women [62.3%] did not hear about pap smear previously, only 144 women [37.7%] heard about it, mostly through Gynecologist/family doctor [13.1%]. A total of 237 women [62%] did not know when to start doing Pap smear, of whom only 69 women [18,1%] answered correctly as after marriage. A total of 319 women [83.5%] did not know how frequently they should do Pap smear, where only 18 women [4.7%] answered correctly as every three years.

A total of 328 women [85.9%] did not know about when to stop doing the Pap smear screening, among whom only 26 women [6.8%] answered correctly as at the age of 65 years. Moreover, 328 women [85.9%] did not know the difference between Pap smear and high vaginal swap.

Table 3 shows the attitude of all respondents towards Pap smear. A total of 294 women [77%] never advised their families/relatives/friends to do Pap smear whereas 330 women [86.4%] never requested their physician to do Pap smear. At the end of the survey, almost all women [75.7%] expressed an interest in knowing more information about the Pap smear screening test.

As shown in table 4, the study found a significant association between having heard about Pap smear and level of education [P=0.017], and profession [P=0.015]. More subjects reported subjective knowledge among university graduates [45.1%], and employee [53%].

Profession was also significantly associated [P=0.008] with an attitude item that is to ask the physician to take a cervical Pap smear, as more employee [15.2%] always did so [table 5].

DISCUSSION:

Cervical cancer is a prevalent disease that is a leading source of morbidity and mortality in women across the world, although it is preventable, diagnosed early, and highly treatable.

Many studies from various nations have revealed disparities in women's knowledge and attitudes about cervical cancer and prevention. Women in underdeveloped countries, unlike in developed countries, have a low level of information about cervical cancer and how to avoid it [21][22][23]. In certain studies [24][25][26], a substantial direct association was discovered between women's knowledge and attitudes about cervical cancer and its prevention, and subsequent Pap smear test use.

Cervical cancer prevention is mostly dependent on the Pap smear's advantage of early detection of premalignant tumours [27]. When detected early, it is also highly treatable [28]. Despite the fact that it is preventable and treatable, the majority of women in Saudi Arabia arrive with late stages of cancer that require extensive multidisciplinary therapeutic options such as surgery, radiation, and chemotherapy [29]. The lack of a comprehensive cervical cancer screening programme [30] and official statewide programmes to vaccinate females against HPV [31] are the key causes of such severe disease presentations.

The aim of this study was to assess the knowledge and attitudes of women attending PHCCs for cervical pap smear. The study included 382 women, of which 63.9% were married.

Our study found that 62.3% did not hear about pap smear previously, and the remaining [37.7%] heard about it mostly through Gynecologist/family doctor [13.1%].

Over a half [62%] of participants did not know when to start doing Pap smear, and only 18,1% answered correctly as after marriage. The majority [83.5%] of women did not know how frequently they should do Pap smear, and only 4.7% answered correctly as every three years.

Similarily, the majority [85.9%] did not know when to stop doing the Pap smear screening, and only 6.8% answered correctly as at the age of 65 years. Moreover, 85.9% did not know the difference between Pap smear and high vaginal swap.

These findings are comparable with others reported by those of the study of Jassim G et al in 2018, who conducted a study of Knowledge, attitudes, and practices regarding cervical cancer and screening among women visiting primary health care Centres in Bahrain and found that over 64% had never heard of a Pap smear procedure and only 3.7% had heard about the human papillomavirus [HPV] vaccine [13].

Our findings were lower than those reported by Al khudairi H et al in 2017, who conducted a study of Public Awareness and Knowledge of Pap Smear as a Screening Test for Cervical Cancer among Saudi Population in Riyadh City, and found that 46.2% of women did not hear whatsoever about Pap smear previously. Al Khudairi et al. study further reports that only 53.9% of women heard about it, mostly during their hospital visits for obstetric/gynecologic purposes 57.1% [12].

Our subjective knowledge level of pap smear was lower than that of cervical cancer reported in the study of Ahlawat P et al in 2018, that was conducted a study of Knowledge and Attitude of Adolescent Girls and Their Mothers Regarding Cervical Cancer: A Community-Based Cross-Sectional Study. Only 61% of mothers and 52% of daughters have heard about cervical cancer.

The study of Jassim G et al. also found that nearly 64% believed that a Pap smear was helpful in detecting pre-cancer and cancer of the cervix, and 44.3% believed that they should have a Pap smear at least every 3 years. Regarding the practice, only 40.7% had a Pap smear in their lifetime. The majority of participants felt embarrassed when examined by a male doctor

83.3% and few underwent a Pap smear screening if they were never married 23.0%[13].
According to our findings, regarding attitude, 77% never advised their families/relatives/friends to do Pap smear whereas 86.4% never requested their physician to do Pap smear. Three-fourths of participating women [75.7%] expressed an interest in knowing more information about the Pap smear screening test. The study found a significant association between having heard about Pap smear and level of education [P=0.017], and profession [P=0.015]. More subjects reported subjective knowledge among university graduates [45.1%], and employee [53%].

As reported by Al Khudairi et al. study, 75.2% of women did not do a single Pap smear previously, and 75.5% of women reported that their physicians never advised them to do Pap smear [12].

Our study found that only 9% reported hearing about Pap smears from media. The study of O. Tapera et al. in 2019 reported a strong association between knowledge and listening to the radio as listening to the radio everyday and 1–6 times a week was also associated to knowing the causes of cervical cancer. Only listening to the radio daily and 1–6 times a week was favourably connected with preventative knowledge [17].

LIMITATIONS:

Due to time and financial restrictions, this study was confined to Taif city alone. It would have been preferable if the rural women had been included, and the differences in knowledge and attitude toward cervical cancer between the two groups had been investigated.

Conclusion and recommendations:

Our study revleaed that there is a relatively low level of knowledge towards cervical Pap smears among PHCC visitors in Taif, Saudi Arabia. The most common source of knowledge was the gynecologist in a healthcare setting. The majority of women are interested to know more about cervical Pap smear. We recommend more awareness program to be conducted among the general public in Taif, Saudi Arabia targeting adult and married women.

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