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RESEARCH ARTICLE

KNOWLEDGE, ATTITUDE AND PRACTICE REGARDING CERVICAL CANCER AND ITS PREVENTION AMONG FEMALES IN TABUK UNIVERSITY, KSA.

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Abstract

Cervical cancer is considered as the third most common type of cancer worldwide and the fifth most frequent cancer in female aged group between 30-44 years in Saudi Arabia (KSA). However it is considered as preventable disease, as many prevention strategies were developed in order to combat its occurrence**.**

Objectives: to assess the level of knowledge, attitude and practice of females in Tabuk University concerning cervical cancer, its vaccine and screening method.

Methods: A cross sectional study was conducted out in the female section of Tabuk University, KSA, using a multistage stratified random sampling technique; 215 female subjects from medical and non-medical collages in Tabuk University were selected to assess their knowledge, attitude and practice regarding cervical cancer, it's vaccination and Pap smear.

Results: the knowledge of the female (staff, administrative members and students) in the medical college was significantly higher than non-medical ones regarding their general awareness about cancer cervix,- most of its risk factors, and the symptoms of cervical cancer. Furthermore, their knowledge about how the cervical cancer can be prevented and the availability of vaccines that can decrease the incidence of cervical cancer were more in the medical college females , with p value ≤0.05. The media represents the highest source of knowledge for both groups while physician roles in raising public awareness were the least based on this study. Being in the medical college and going through reproductive module and gynecology rotation represents an important source in the medical college group (35.9%) with p value ≤0.05. The attitude of the staff members in both groups towards willingness to give their daughter HPV vaccine were significantly higher among female staff in the medical group (79.0%). however, the practice of Pap smear in both of the groups are around (24.0%) which is considered low. In contrary, the attitude of the medical students regarding HPV -vaccine were not significantly different from the students in non- medical college with p value p >0.05. Even more the students in non-medical college group there attitude towards Pap smear information and going through Pap smear screening program were significantly higher than the students in medical group with p value ≤0.05.

conclusion and recommendations: adequate knowledge and attitude of females in Tabuk University about cancer cervix and its preventive measures and the medical background of females positively affecting them while their practice was deficient. Awareness should be increased through the popular means to all females with implementation of a national cervical cancer screening program in Tabuk city.

Introduction:-

Cancer is a major public health problem throughout the world. Cervical cancer is considered as the third most common type of cancer worldwide, with 2.3 million prevalent cases and 510 000 incident cases each year [(1)]. Annually, 288 000 women die of cervical cancer and 80% of these deaths occur in developing countries [(2)]. The rates of cervical cancer in the developed countries are 5 per 100 000 women compared with 25 per 100 000 in developing countries. The highest mortality rates in the later ones are due to many reasons, the 1st one is the advanced stage at presentation [(3).]

For cervical cancer to develop, persistent cervical infection with high risk human papillomavirus (HPV) is necessary, with nearly 100% of cervical cancer cases test positive for HPV [(4)] .Infection with HPV is predominantly sexually transmitted which infects the epithelial cells of the cervix uteri that can result in precancerous lesions and invasive cancer [(5)]. The most carcinogenic type of HPV is HPV type 16 which account for approximately 55% to 60% of cervical cancer. Followed by, HPV type 18 which account for approximately 10- 15% of cervical cancer [(6)]. It is estimated that 50% to 80% of sexually active women are infected at least once in their lifetime with one of its different strains, also several studies suggest that beside the infection with HPV, the early onset of sexual activities, multiple sex partners, long use of oral contraceptives, immune-suppressant's, smoking and specific dietary factors are considered as risk factors for developing cancer cervix [(7)].

Cancer cervix is considered a preventable disease, as many prevention strategies were developed in order to combat the occurrence of disease including; a) primary prevention of transmission of HPV, b) HPV vaccines to protect against the development of cancer cervix, precancerous cervical lesions, persistent infections, and HPV-related conditions such as genital warts [(8)], c) lastly, the key aspect of the prevention is the detection of the pre-malignant form by cervical screening. Marked decreases in cervical cancer incidence and deaths have been achieved by systematic population-based cytology screening in the developed nations, from as early as the 1960s [(9).] Papanicolaou cytological testing (Pap smear) permits cervical lesions to be detected before they become cancerous, effectively reducing the incidence of cervical cancer by 75%–90% [(10).] The American preventive services task force recommended Pap smears at least every 3 years for women who have been sexually active [(11).] Although cervical cancer is the most common cancer of women in developing countries, it is estimated that only about 5% of women have been screened for the disease with Pap smears, compared to 40%–50% in developed countries [(12)] . The poor uptake of the cervical cancer screening may be attributed to the lack of communication between healthcare workers and patients regarding the availability and benefits of the screening. Also deficient women's knowledge about cervical cancer is and the ways of prevention [(13) (14).]

In Saudi Arabia cervical cancer is the thirteenth –most frequent cancer among Saudi female , and the fifth most frequent cancer in female aged group between 30-44 years. Saudi Arabia considered one of the countries with lowest incidence rate of cervical cancer in the world at 1.9 per 100,000 women [(13).] However, Despite of the availability of pap smear among different health sectors in Saudi Arabia and also presence of two different types of vaccines ; Cervarix (GlaxoSmithKline Biologicals, Rixensart, Belgium) a bivalent vaccine against HPV- 16/18 types, and Gardasil (Merck and Co., Inc. West Point, PA, USA) the quadrivalent vaccine against HPV-16/18/11/6., [(15).] Furthermore, the prevalence of high risk HPV types 16 and 18 between 5-5.6% in Saudi women which considered low if compared to USA with prevalence (26.8%)[(16)]. Still most cases of cervical cancer in Saudi women usually present at advanced stages and necessitate extensive chemoradio therapy [(17)]. Clearly indicating that there is no well-established screening program for cancer cervix throughout the country [(18).]

The objective of this research is to assess the level of knowledge , attitude and practice (KAP) of females in Tabuk University concerning cervical cancer, its vaccine and screening method.

Subjects and methods:-

Study design and setting:

A cross sectional study was conducted out in the female section of Tabuk University, KSA, in the period from November 2013 to January 2014. Subjects and Sampling: Sample size calculation was performed depending on; total number of females (students, staff and administrative members) in Tabuk University, least percentage of knowledge about the association between HPV infection and cervical cancer obtained from previous similar study (15.9%) [(19),] 95% confidence limit and 20% expected non response rate. This results in a sample of 251, Using a multistage stratified random sampling technique, the female subjects in our study were selected from the female section of Tabuk University then they were divided into two main categories (medical & non- medical) then from each category two colleges were selected by simple random sampling technique ("medical and applied medical sciences collages" in medical category) and (" business administration and computer sciences" in non- medical category). In each of the selected colleges different strata were performed, including; staff and administrative members and students, then a proportional allocation from each strata was performed resulting in choosing (81staff & administrative members and 170 student) in medical collages and 168(41 staff & administrative members and 127 student) .

Data collection method:- The data about the female's knowledge, attitude and practice regarding cervical cancer, its preventive methods were collected using a self-administrative, semi-structured, anonymous questionnaire, asking about:

- **Background of the participants:-** age, nationality, Marital status, level of education, Occupation, Parity, years of marriage, husband's education, husband's occupation and history of smoking.
- **Knowledge:-** including questions testing their awareness and knowledge about; cervical cancer, risk factors, symptoms, prevention, their awareness about its screening & screening, prognosis in case of early diagnosis and lastly their source of knowledge.
- **Attitude:-** questions asking about their attitude about doing a pap smear for herself and / or her daughter.
- **Practice:-** questions asking about their practice for a pap smear and its frequency and causes in the case of non-practicing.

A Pilot study was conducted on 30 female (which weren't included in the sample) to test the feasibility of the questionnaire and changes were done according to its results.

Ethical consideration:- all official permissions to conduct this research were obtained and informed verbal consents were obtained from all participants after explaining the objectives of our study to them, confidentiality of the collected data and information was maintained.

Data management:- data were coded and analyzed using SPSS version 19, mean and standard deviation were calculated for quantitative data, while numbers and percentages was used to present qualitative ones. Chi-square and Fisher exact tests were used to test the difference between the different categories of our study (medical & non-medical), significant difference was considered when p value was ≤ 0.05.

Results:-

Table (1) shows the background of the participant females; where most of them were having age group was between 21-25 years old in both medical and non-medical groups (39.4%) & (56.5%), of Saudi nationality (83.7%) &(95.8%), in collage (75.3%) & (88.1%) , students (67.7%) & (75.6%), nulliparous (73.3%) & (57.1%), not married (68.5%) & (47.0%), non-smokers(69.7%) & (78.0%), respectively. However (68.5%) of females in medical collages were single opposite to(48.2%) in non-medical ones who were married, among the married females; most of their husbands were having have post graduate qualifications and an occupation (56.5%) & (100.0%) respectively in medical colleges , while they were having college qualification (42.1%) and an occupation (91.4%) in medical and non-medical ones .

Table (2) illustrate the knowledge about cancer cervix among ***staff & administrative*** members in the studied groups; the knowledge about risk factors of cancer cervix, was significantly higher in the females in the medical group than non-medical group which include general awareness about cancer cervix and it's risk factors (67.9%)

& (34.1%), it's sexually related (28.4) & (4.9%) , smoking habits (43.2%)&(17.1%), early marriage <18 years old (37.0%) & (12.2%), diet (19.8%) & (4.9%), previous marriages (21.0%)& (4.9%) and infection with HPV(72.8%) & (22.0%). The knowledge about the symptoms of cancer cervix were also significantly higher in the staff and administrative member of medical group. These symptoms include; Abnormal vaginal bleeding (69.1%) & (43.1%) , Bleeding after sexual intercourse (44.4%) & (2.4%) Abdominal pain (39.5%) & (7.3%) Bleeding after menopause (59.3%) & (17.1%). Also their knowledge it's a disease that could be prevented (67.9%) &(61.0%) and presence of a vaccine to prevent cancer cervix (56.8%) ((7.3%) respectively with p value ≤0.05

Table (3) shows the knowledge about cancer cervix among ***female students*** in the studied groups where the knowledge about risk factors of cancer cervix, was significantly higher in female students in medical group than non-medical group regarding general awareness about cancer cervix and it's risk factors (56.5%) & (44.9%). From these risk factors early marriage <18 years old (29.4%) & (18.1%), Having immune suppression state (35.3%) &(17.3%), infection with HPV(55.3) &(37.0%) ,. Furthermore, Students in medical group their knowledge about the cervical cancer disease that it could be prevented (67.1%) was significantly higher than non- medical group(54.3%). This significant difference between medical and non- medical groups extended to include the knowledge about the -presence of a vaccine to prevent cancer cervix (56.8%)& (7.3%),early better prognosis with early diagnosis (89.4%) & (76.4%) and awareness about Pap smear(68.2%) & (53.5%) respectively with p value ≤0.05. While the female students in non-medical group were having significantly higher knowledge about the symptoms of cancer cervix represented in abdominal pain (32.3%) and Bleeding after menopause (33.9%) with p value ≤0.05.

Fig. (1) Demonstrate sources of participants' knowledge about cancer cervix and its prevention, where the media representing the highest source of knowledge for both groups and the doctors were the least one with no significant difference. Being in the medical field with medical study represents another source of information for the female in medical group which has an impact on their knowledge when compared with non- medical group with p value ≤0.05.

Table (4) shows the attitude and practice about cancer cervix among ***staff & administrative members*** in the studied groups; the attitude of both groups was generally high but with the medical group it was significantly higher regarding giving their daughter the HPV vaccine against cancer cervix at the school age (79.0%), while the practice of Pap smear in both group were around (24.0%) which is considered low . Among, their reasons of not doing Pap smear routinely is ;that they never heard about this test and they were not sure of its benefits, which was significant among the non-medical group (p value ≤0.05), . Another factor which significant in the medical group is that their physician don't emphasized on the importance of undergoing Pap smear screening. (p value ≤0.05) .

Table (5) shows the attitude and practice about cancer cervix among ***female students*** in the studied groups; the attitude of both groups were not significantly different between them (p >0.05), The practice of the *students* in non-medical group were significantly higher than that of medical group in asking the doctor about Pap smear and in their actual practice of undergoing Pap smear screening with p value ≤0.05. Among their reasons of not doing it ; that they never heard about this test and they were not sure of its benefits in non-medical group which was significant highly among them when compared to medical group with p value ≤0.05 , while being not married was the main factor in medical group for not doing Pap smear with significant difference from non- medical group (p value ≤0.05) .

Table (1): Background of the participant females

Item	Medical collages No. =251 (100.0%)	Non-medical collages No. =168 (100.0%)	p
Age:**			
15-20	79 (31.5)	28 (16.7)	
21-25	99 (39.4)	95 (56.5)	
26-30	12 (4.8)	24 (14.3)	
31-35	21 (8.4)	9 (5.4)	0.00*
36-40	23 (9.2)	6 (3.6)	
41-45	10 (4.0)	5 (3.0)	
46-50	5 (2.0)	1 (0.6)	
>50	2 (0.8)	0 (0.0)	
Nationality:			
- Saudi	210 (83.7)	161 (95.8)	0.00*
- Non- Saudi	41 (16.3)	7 (4.2)	
Marital status:**			
-married	69 (27.5)	81 (48.2)	
-single	172 (68.5)	79 (47.0)	0.00*
-divorced	7 (2.8)	5 (3.0)	
-widow	3 (1.2%	3 (1.8)	
Education:**			
- Elementary	3 (1.2)	0 (0.0)	0.00*
- Preparatory	1 (0.4)	0 (0.0)	
- High school	6 (2.4)	7 (4.2)	
- Collage	189 (75.3)	148 (88.1)	
- post graduate	52 (20.7)	13 (7.7)	
Occupation:			
- student	170 (67.7)	127 (75.6)	0.21
- Employee	31 (12.4)	17 (10.1)	
- staff member	50 (19.9)	24 (14.3)	
Parity:			
- nullipara	184 (73.3)	96 (57.1)	0.00*
- 1-5	61 (24.3)	52 (31.0)	
- >5	6 (2.4)	20 (11.9)	
Duration of marriage:			
-not married	172 (68.5)	79 (47.0)	0.00*
-less than 5 years	33 (13.1)	36 (21.4)	
- ≥ 5 years	46(18.3)	53 (31.5)	
history of smoking:			
-yes	76 (30.3)	37 (22.0)	0.062
-no	175 (69.7)	131 (78.0)	
Husband's education:**	**No. =69 (100.0%)**	**No. =81 (100.0%)**	
- Elementary	2 (3.0)	7 (8.6)	
- Preparatory	1 (1.4)	7 (8.6)	0.00*
- High school	12 (17.4)	26 (32.1)	
- Collage	15 (21.7)	34 (42.1)	
- post graduate	39 (56.5)	7 (8.6)	
husband's occupation:**	**No. =69 (100.0%)**	**No. =81 (100.0%)**	
-Working.	69 (100.0)	74 (91.4)	0.01*
-not working	0 (0.0)	7 (8.6)	

***Significant difference (p<0.05)** ****fisher exact was calculated**

Table (2): knowledge about cancer cervix among staff& administrative members in the studied groups. (Correct responses were only presented).

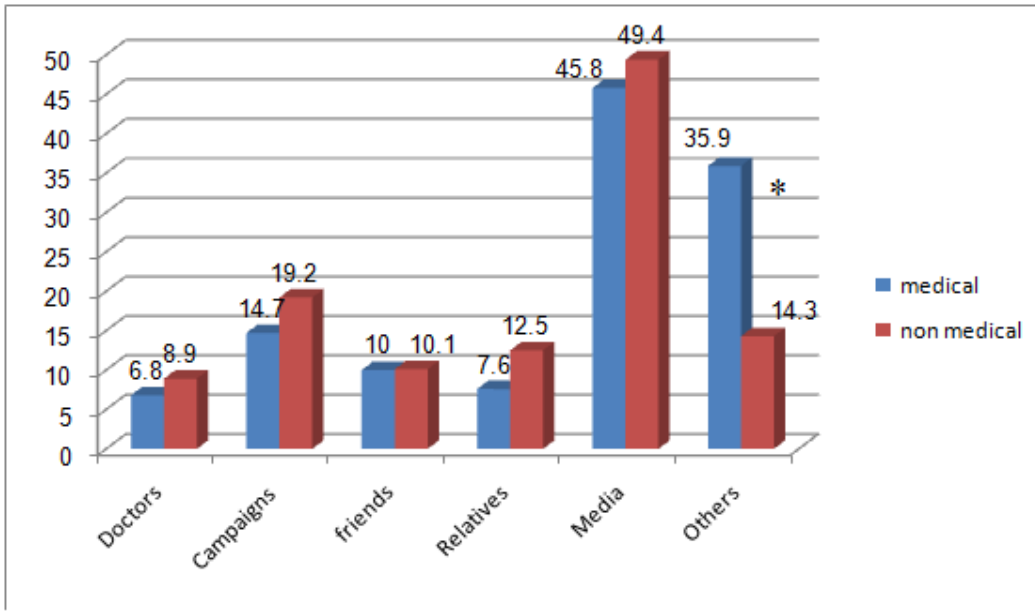
Items	Medical collages N0. (%)	Non-medical collages N0. (%)	p
	81 (100.0%)	41 (100.0%)	
A) Knowledge about risk factors of cancer cervix			
Having general awareness about cancer cervix and the risk factors	55 (67.9)	14 (34.1)	0.00*
Sexually related	23 (28.4)	2 (4.9)	0.00*
smoking	35 (43.2)	7 (17.1)	0.00*
Early marriage <18 years old	30 (37.0)	5 (12.2)	0.00*
Diet	16 (19.8)	2 (4.9)	0.02*
Previous marriages	17 (21.0)	2 (4.9)	0.02*
Marriage to a man with other women	13 (16.0)	2 (4.9)	0.07
Having immune suppression state	28 (34.6)	12 (29.3)	0.55
Infection with HPV	59 (72.8)	9 (22.0)	0.00*
Oral contraception use over 5 years	32 (39.5)	15 (36.6)	0.75
B) symptoms of cancer cervix			
Abnormal vaginal bleeding	56 (69.1)	18 (43.9)	0.00*
Bleeding after sexual intercourse	36 (44.4)	1 (2.4)	0.00*
Abdominal pain	32 (39.5)	3 (7.3)	0.00*
Bleeding after menopause.	48 (59.3)	7 (17.1)	0.00*
C) prevention of cancer cervix			
It's a disease that could be prevented.	55 (67.9)	25 (61.0)	0.01*
Presence of a vaccine to prevent cancer cervix.	46 (56.8)	3 (7.3)	0.00*
Early diagnosis could lead to better prognosis	65 (80.2)	32 (78.0)	0.91
Awareness about Pap smear	61 (75.3)	31 (75.6)	0.97

***Significant difference (p<0.05)**

Table (3): knowledge about cancer cervix among female students in the studied groups. (Correct responses were only presented).

items	Medical collages N. (%) 170 (100.0%)	Non-medical collages N. (%) 127 (100.0%)	p
A) Knowledge about risk factors of cancer cervix			
Having general awareness about the risk factors	96 (56.5)	57 (44.9)	0.04*
Sexually related	23 (13.5)	23 (18.1)	0.28
smoking	45 (26.5)	44 (34.6)	0.12
Early marriage <18 years old	50 (29.4)	23 (18.1)	0.02*
Diet	30 (17.6)	25 (19.7)	0.65
Previous marriages	6 (3.5)	4 (3.1)	0.85
Marriage to a man with other women	14 (8.2)	19 (15.0)	0.06
Having immune suppression state	60 (35.3)	22 (17.3)	0.00*
Infection with HPV	94 (55.3)	47 (37.0)	0.00*
Oral contraception use over 5 years	56 (32.9)	60 (47.2)	0.01*
B) symptoms of cancer cervix			
Abnormal vaginal bleeding	74 (43.5)	63 (49.6)	0.29
Bleeding after sexual intercourse	49 (28.8)	29 (22.8)	0.24
Abdominal pain	29 (17.1)	41 (32.3)	0.00*
Bleeding after menopause.	29 (17.1)	43 (33.9)	0.00*
C) prevention of cancer cervix			
It's a disease that could be prevented.	114 (67.1)	69 (54.3)	0.02*
Presence of a vaccine to prevent cancer cervix.	46 (56.8)	3 (7.3)	0.00*
Early diagnosis could lead to better prognosis	152 (89.4)	97 (76.4)	0.00*
Awareness about Pap smear	116 (68.2)	68 (53.5)	0.00*

***Significant difference (p<0.05)**



*significant difference (p<0.05).

Fig. (1): sources of participants' knowledge about cancer cervix and its prevention.

Table (4): Attitude and practice about cancer cervix of staff & administrative members in the studied groups. (Correct responses were only presented).

items	Medical collages N. (%) 81 (100.0%)	Non-medical collages N. (%) 41 (100.0%)	p
A) Attitude toward preventive measures of cancer cervix			
Would like to do Pap smear, if having an adequate knowledge about it.	57 (70.4)	35 (85.4)	0.06
Would like to give my daughter the vaccine against cancer cervix at the school age	64 (79.0)	25 (61.0)	0.03*
B) Practice toward screening of cancer cervix			
Had asking the doctor before to do it for me.	13 (16.0)	9 (22.0)	0.42
Had done a Pap smear	20 (24.7)	10 (24.4)	0.97
Frequency: (among those who done it before)			
- Yearly	1 (5.0)	0 (0.0)	0.18
- Every 3 years	5 (25.0)	0 (0.0)	
- Once in a life time	14 (70.0)	10 (100.0)	
Reasons of not doing Pap smear (among those who didn't do it before):	**N. (61)**	**N. (31)**	
-never heard about this test	6 (9.8)	10 (32.2)	0.00*
-Not sure of its benefits	5 (8.2)	11 (35.5)	0.00*
- Shyness	4 (6.5)	5 (16.1)	0.16
- It's harmful and painful.	4 (6.5)	6 (19.3)	0.08
- not married	8 (13.1)	2 (6.4)	0.49
-Refuse of the husband	0 (0.0)	0 (0.0)	0.12
-others	43 (70.5)	8 (25.8)	0.00*

*Significant difference (p<0.05)

Table (5): Attitude and practice about cancer cervix among female students in the studied groups. (Correct responses were only presented).

items	Medical collages N. (%)	Non-medical collages N. (%)	p
	170 (100.0%)	**127 (100.0%)**	
A) Attitude toward preventive measures of cancer cervix			
Would like to do Pap smear, if having an adequate knowledge about it.	110 (64.7)	88 (69.3)	0.40
Would like to give my daughter the vaccine against cancer cervix at the school age	98 (57.6)	83 (65.4)	0.17
B) Practice toward screening of cancer cervix			
Had asking the doctor before to do it for me.	3 (1.8)	8 (6.3)	0.04*
Had done a Pap smear	2 (1.2)	11 (8.7)	0.00*
Frequency: (among those who done it before)	**N. (2)**	**N. (11)**	
- Yearly	0 (0.0)	1 (0.8)	
- Every 3 years	0 (0.0)	0 (0.0)	1.0
- Once in a life time	2 (1.2)	10 (100.0)	
Reasons of not doing Pap smear (among those who didn't do it before)	**N. (168)**	**N. (116)**	
-never heard about this test	37 (22.0)	48 (41.3)	0.00*
-Not sure of its benefits	8 (4.7)	22 (18.9)	0.00*
- Shyness	19 (11.3)	21(18.1)	0.10
- It's harmful and painful.	9 (5.3)	18(15.5)	0.00*
- not married	90 (53.5)	42 (36.2)	0.00*
-Refuse of the husband	0 (0.0)	2 (1.7)	0.16
-others	26 (15.4)	51 (43.9)	0.00*

***Significant difference (p<0.05)**

Discussion:-

Cancer cervix is considered as a preventable disease as vaccine and early detection methods representing cornerstone measures in its prevention [(10)]. A cross sectional study was conducted out in the female section of Tabuk university, KSA, to assess the level of knowledge, attitude and practice toward cancer cervix and its preventive and screening measures.

Our results showed that the most common age group of our participants was between (21-25) years old, which is the usual age for university students as most of the studied females in both groups were students. The numbers of non-married females "which has reflection on null parity" was significantly higher among females in medical colleges, this may be attributed to the nature of their study which necessitate more time to be given for hard studying and work. Although most of females in both categories were nonsmokers, but also to our surprise a respectable percent of them were smoker with no significant difference between those in the medical group (who is supposed to know the smoking hazards, including development of cancers) and those in non-medical group, this is opposite to the result of a study conducted in KSA, which found that the prevalence of smoking was highest in the College of Business and Administration (10.81%) and lowest in the College of Medicine (0.86%) [(20)].

High percentage of staff and administrative members in the medical group (67.9%) were having significant higher awareness about cancer cervix and its risk factors, which is similar to the level of awareness in the study conducted in Nepal (65.7%) [(21)]. This level of awareness was reflected on their knowledge of most of the risk factors of cancer cervix, which was significantly higher in most of items than those of the non-medical group, especially in the association between human papilloma virus infection and the occurrence of cancer cervix, also this was the situation

regarding their knowledge about the symptoms of cancer cervix as well as their knowledge that the disease could be prevented and presence of a vaccine. These results may be due to their medical background which helps them to acquire more knowledge about the disease, risk factors, symptoms and preventive measure. However the awareness about the Pap smear was nearly the same between both groups, but at the same time it was higher than that of other similar study conducted in India [(22)]. The role of education was stated in other similar studies that referred the difference in the knowledge among sampled females to their educational background [(23), (24)].

When assessing the difference in the knowledge between students in the two groups, it was found that the nature of the medical study of the females in the medical group increases significantly their awareness about the disease, knowledge about some risk factors as; early marriage, immune suppression and its relation with HPV infection as well as all items of prevention of cancer cervix including their knowledge about vaccine and Pap smear. However, the students of the two groups were having nearly the same knowledge regarding other risk factors and symptoms of cancer cervix. More than that, the non-medical students were having better significant knowledge regarding long term use of contraceptive pills as a risk factor as well as their knowledge that abdominal pain and post-menopausal bleeding are considered as warning symptoms of cancer cervix. This could be attributed to that higher percentage of non-medical students were married, which is reflected on their visit to obstetrics and gynecology physician with better opportunities to have a good background about health issues related to the female reproductive system and its problems.

The source of participants' knowledge about cancer cervix and its prevention were nearly the same between all studied females, but it was significantly higher in "others" among the medical group; which was stated by them to be their medical knowledge and study. While the non-medical ones retrieve the information from other sources as media, campaigns and relatives. This differs from the results of the study conducted in Nepal, where the friends and relatives were the first source followed by health professionals and then media [(21)]. This difference may be due to that the media, including (TV& internet) have the upper hand in our communities in providing information, which necessitate carful dealing from the health authorities with this issue to ensure providing sound medical information. To our surprise, the role of the physicians as a source of knowledge, was the lowest percentage in both groups. This is a threatening indicator about the role of physician in our community.

The attitude toward Pap smear among staff and administrative members was satisfactory and nearly the same between the two groups with no significant different, while regarding vaccination; higher significant percentage of the staff and administrative members of medical groups have a better attitude than those in the other group. This could be also related to the knowledge which is the base affecting attitude of the person, as the knowledge about Pap smear was nearly the same between the two groups, while those in the medical group were having better knowledge about the vaccination against cancer cervix .
Although the attitude toward Pap smear was considered satisfactory in both groups, their practice of it wasn't the same in all of them. Regarding Reasons of not doing Pap smear, the most common cause among the medical group was" other causes " representing in; they don't find who encourage them to do it , absence of symptoms of the disease and being single, while in non-medical group the most common causes was; not being sure of its benefits and that they never heard about it before. These results are similar to that of a study conducted in South Africa, which stated that respondents who did not have the test was mainly because of personal factors such as fear of the procedure, cultural reasons, and were not ill [(25)]. All these causes indicate the urgent need for more awareness campaigns about this disease and its preventive measure. A good and important indicator was present among our results; that the refusal of the husband as a cause of non-doing Pap smear with about 0.0% in both groups, this may be due to most of husbands in both groups were highly educated with better health awareness.

The marital status again had played an important role among our females student in both groups, where the attitude as well as the practice of Pap smear was higher among students of non-medical group than medical ones. This could be explained as a lower percentage of medical students were not married, and this surely affects their attitude and prevent them from doing this test, also most of them stated that this was the first cause which prevents them from not doing Pap smear. The association between marriage and the screening was stated in a study conducted in India where the results show that married women are more likely to be screened[(26)] .The non-medical students stated that the common cause in not doing Pap smear was that it was not recommended to them by the physician (43.9%), this finding is much more that the result of similar study conducted in Western Region of Saudi Arabia where only 18.3% of females who don't practices Pap smear stated that their physician had not recommended it [(18)], followed by

that they never hear about this test, not sure of its benefits and their idea that it's painful and harmful. All these reasons necessitate the need for an official national awareness program for both the physicians and the publics.

Conclusion& Recommendations:-

Knowledge and attitude of females in Tabuk University about cancer cervix and its preventive measures were nearly adequate to some degree, but their practice was deficient. The medical background of females in medical collages improves in general their Knowledge, attitude than that of non-medical ones. However some points need to be strengthened in both groups, including:

- Awareness campaign should be intensified through the popular means females in Tabuk city.
- Awareness workshops must be held up by the health directory in Tabuk city to all family physicians and Obstetrics and Gynecology physicians about the disease and it preventing measures.
- A national cervical cancer screening program needs to be implemented in Saudi Arabia in general and in Tabuk city in special.
- The physician should make more efforts to increase the awareness of their patients about Pap smear and HPV vaccine and their role in preventing cervical cancer. As this study clearly indicating the physician role in this area is lacking.

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