

Assessing the Awareness of Students about the Cervical Cancer caused by HPV and HPV Vaccine for Undergraduate Female Students in Hail University

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ABSTRACT

We assess if the number of attended campaigns, which is mainly designed to enlighten people about the HPV, its vaccine, and the cervical cancer disease; would enforce undergraduate students in Hail university to take the HPV vaccine. Objective: Our goal is to find out the association between the campaigns attendance and the awareness to take the HPV vaccine in order to get protected from the causes of cervical cancer among female students in Hail University. Methods: We administrated chi-square test to examine the association between the two variables. The first variable is the number of attendances to the campaigns and the second variable is the students' intentions to take the vaccine. Results: there is no association between the number of attended campaigns and the student intentions to take the vaccine. In another words, the sample evidence is not strong enough to reject null hypothesis in favor of alternative hypothesis at $\alpha = 0.05$. The null hypothesis is therefore probably true. Conclusion: More than two-third of students do not know that HPV is a preventable disease. Attending the campaigns are not enough to encourage young women to be aware of the importance of taking the vaccine.

General Terms

Vaccine, HPV

Keywords

Campaigns, Cervical Cancer.

1. INTRODUCTION

Cervical cancer is the second type of cancer that lays behind women' death globally [1]. In the developing countries, cervical cancer is considered the major reason of morality among all other cancers. It is showed that more than three quarter of all new cases of cervical cancer will occur in these countries. Moreover, majority of these cases would be associated with HPV [2]. The problem is that kind of cancer caused by HPV infection were not show symptoms such as itching, discharge, pain, or tenderness. Also, bacterial vaginosis is the only symptom that are statistically approved to be associated with HPV. Sometimes, genital warts were appeared with HPV types 6 and 1 [3]. Cervical cancer has been proven to be prevented against HPV if women took HPV vaccine in advance [4]. In KSA, vaccine helps protecting more than half incidents of cervical cancer [5]. In Saudi Arabia most of the cervical cancers have very great relation with HPV[5].

2. OBJECTIVE

In this study we aim to find out the association between the smear campaign attendance and the awareness to take the HPV

vaccine in order to get protected from the causes of cervical cancer among female students in Hail University.

Research Question: Is there an association between the number of attended campaigns and the student intentions to take the vaccine?

Null Hypothesis: There is no association between the number of attended campaigns and the student intentions to take the vaccine (i.e. they are statistically independent).

Alternate Hypothesis: There is an association (i.e. they are not independent).

3. DATA COLLECTION

The questionnaire was distributed to the participants though Google form and included the following sections:

Demographic data such as participant's education year, their parents' educational level.

General questions about cervical cancer, HPV, and its vaccine.

The last section was about the source of awareness and the number of attended campaigns [6].

4. METHOD

We conducted a cross sectional study among computer science and information system department female section at university of Hail. Data were collected using validated questionnaires of seventeen questions including demographic information, students' background about HPV and the number of attended campaigns. It was conducted between September 2022 until October 2022.

$Z = 1.96$ at 95% level of significance with $\alpha = 0.05$ (5% significance level).

The degrees of freedom formula is:

$$df = (r - 1)(c - 1)$$

Where: r = number of rows in the cross-tabulation table and c = number of columns in the cross-tabulation table. Therefore, the degrees of freedom is $df = (3 - 1)(3 - 1) = 4$.

5. RESULT

Descriptive Statistics

5.1 Demographic Characteristics

The total respondents to the survey were 100 participants. Most of the respondents were from the graduated students with percentage of 45% whereas the least respondents were from the third-year students. 86 percent of the total students were single

and on the opposite side only 9% represent married woman. About their fathers' educational level, the pie chart shows that most student have fathers with vary educations from elementary, pre-graduate and graduate with equally likely percentage of 28% each, few of the sampled students has post graduate fathers; on the other hand, non-educated father represents 17% from all others. On the other side, the respondents' mothers' education level, shows that 35% present of all mothers do not hold a degree while the other is educated with different levels. However only 2% of respondents have post-graduate mothers. Table 1 illustrate the above statistics.

Table 1: Socio-Demographic Characteristics of Study Participants.

Socio-Demographic		Count (%)
Year of Education	1 st year	20 (20%)
	2 nd Year	28 (28%)
	3 rd Year	7 (7%)
	4 th Year	45 (45%)
Marital Status	Single	86 (86%)
	Betrothed	1 (1%)
	Married	3 (3%)
	Divorced	2 (2%)
Father Educational Level	Not Educated	11 (11%)
	Before Secondary	10 (10%)
	Secondary	21 (21%)
	University	28 (28%)
	Graduated	2 (2%)

5.2 Awareness and Knowledge on HPV Infection and Its Risk Descriptive

More than half of all graduate respondents at all levels have not heard of HPV and that HPV is the main cause of the cervical cancer. In spite that only 22% shows that they know about the Pap smear exam, majority of the responses show lack of knowledge. More than two-third of students do not know about the HPV vaccine. Furthermore, most of all sampled student did not take the vaccine.

Regarding the reasons behind why the student did not take the vaccine the answers came as following 63% have not heard about the vaccine previously, quarter of the sample clearly mentioned that they are in need for more information about the vaccine, 12% of the students believe that they are not susceptible to HPV. High percentage shows unawareness in term of that vaccine would be a preventive measure against the cervical cancer. Table 2 shows the above finding.

Table 2: Awareness and Knowledge on HPV Infection and Its Risk.

Awareness and Knowledge on HPV Infection and Its Risk	Count (%)
	No 57%
Do you know HPV?	Yes 40%
Do you know that HPV can cause cervical cancer?	Yes 36%
	No 64%
Do you know HPV can be detected by "Pap smear"?	Yes 26%
	No 74%
Do you know there is a vaccine against HPV?	No 71%
	Yes 29%
HPV vaccination can protect against cervical cancer?	Yes 64%
	No 36%
HPV vaccine can be administered to girls from 9 years of age?	Yes 29%
	No 71%
Source of awareness.	Friends 1%
	Home 3%
	Internet Articles 26%
Number of attended campaigns.	One 73%
	Two 7%
	Three 11%
I have a plan in the recent future to take HPV vaccine.	Yes 33%
	No 11%
	I don't Know 66%

♣ Part3: Source of Awareness Descriptive

About source of awareness of HPV vaccine, first source comes from surfing the Internet with 37 percent. The smear campaign comes in the second ranking with 36 percent. In the third and fourth rank family and friends with equal percent of 6 percent each.

In terms of the number of campaigns attended by the students, 80 percent of the students did not attend any campaign while 12 percent of the students have attended more than two campaigns. Correspondingly, 34 percent show positive response that would take the vaccine in the recent future.

Table 3: Source of Awareness and Knowledge on HPV.

		Count (%)	0.23 07	- 0.08 54	-0.1499	
Source of awareness.	Friends 1%		3	2	9	14
	Home 3%		21.4 3	14.2 9	64.29	100. 00
	Internet Articles 26%		8.33	18.1 8	16.67	13.8 6
	One 73%		2.97 0	1.98 0	8.911	13.8 61
Number of attended campaigns.	Two 7%		4.99 0	1.52 5	7.485	
	Three 11%		-	0.47	1.5149	
	Yes 33%		1.99 01	52		
I have a plan in the recent future to take HPV vaccine.	No 11%		-	0.38	0.5537	
	I don't Know 66%		0.89 09	49		
	None		29	8	40	77

5.3 Inferential Statistic

Using Minitab and by applying the chi-square test to determine if we would reject the null hypothesis. The region of acceptance for H0 is $\chi^2 \leq 9.488$.

The decision rule is then stated as follows:

Not reject H0 if χ^2 -stat lies at or below the upper limit of 9.488.

Reject H0 if χ^2 -stat lies above 9.488.

Table 4: Chi-Square test between Number of attended campaigns column and students' intentions to take the vaccine.

Number of attended campaigns			I don't know	All	
	Yes	No			
One	4	1	5	10	
	40.0 0	10.0 0	50.00	100. 00	
	11.1 1	9.09	9.26	9.90	
	3.96 0	0.99 0	4.950	9.90 1	
	3.56 4	1.08 9	5.347		
	0.43 56	- 0.08 91	-0.3465		
					None
					29
					8
					40
					77
					37.6 6
					10.3 9
					51.95
					100. 00
					80.5 6
					72.7 3
					74.07
					76.2 4
					28.7 13
					7.92 1
					39.604
					76.2 38
					27.4 46
					8.38 6
					41.168
					1.55 45
					- 0.38 61
					-1.1683
					0.29 67
					- 0.13 33
					-0.1821
					All
					36
					11
					54
					101
					35.6 4
					10.8 9
					53.47
					100. 00
					100. 00
					100.00
					100. 00
					35.6 44
					10.8 91
					53.465
					100. 000

Cell Contents
Count
% of Row
% of Column
% of Total
Expected count
Residual
Standardized residual

After comparing the sample test statistic to the region of acceptance

The sample test statistic, χ^2 -stat = 1.470 (as shown in the below table) lies within the region of acceptance of $\chi^2 \leq 9.488$.

This is also confirmed with the p-value (0.832) > α (0.05). This is also confirmed with the p-value (0.832) > α (0.05).

Table 5: Chi-Square results

	Chi-Square	DF	P-Value
Pearson	1.470	4	0.832
Likelihood Ratio	1.569	4	0.814

4 cell(s) with expected counts less than 5.

Also, the figure 1 below demonstrates the above result.

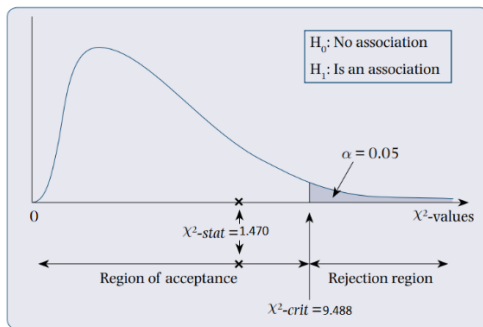


Fig 1: Not rejecting the null hypothesis

The test shows that we must not reject the null hypothesis at the 5% level of significance. In another words, the sample evidence is not strong enough to reject null hypothesis in favour of alternative hypothesis at $\alpha = 0.05$. The null hypothesis is therefore probably true. Thus, there is no association between the number of attended campaigns and the student intentions to take the vaccine.

6. DISCUSSION

Lack of awareness: Our study shows lack of awareness about the HPV infection. Also, students show lack of knowledge on how to prevent such disease and most of the student they don't know that there is direct relation between HPV and cervical cancer.

Similarity of other studies findings: Multiple studies have found that women at risk for cervical cancer seek accurate information to learn about prevention strategies, use screening programs, and get their daughters vaccinated against HPV. Dynamic and responsive methodologies appear to be appropriate to the care of cervical cancer and improve awareness among the female students of Hail, as shown by multiple quantitative and qualitative studies. The importance of proving that awareness campaigns help women gauge their susceptibility to the disease and take preventative measures [7]. On the other side, public institutions should invest heavily in promoting HPV vaccination and screening for cervical cancer [8]. A study that is conducted in Riyadh in the primary care clinics of King Saud University Medical City comes with the same finding that the ultimate knowledge about HPV, its

vaccine and cervical cancer causes is significantly low among Saudi women [6]. The researchers suggested that there is a need for create preventive methods and efficient programs for HPV-related awareness [6].

Further consideration: This study comes to a conclusion that the health campaign does not reach the assigned target of increasing the number of vaccinated female students. This result is logical to a great extent taking into consideration the sociocultural impact on the study group. Since the sample students are Muslim Arab females in Muslim Arab area, the role of the sociocultural factors is highly involved and most likely affected the results. A Muslim Arab community would not encourage their young girls to get vaccinated against sexually transmitted diseases lest they would be socially stigmatized as being playful or having illegitimate relationships outside the wed locks. Although the association between this type of vaccinations and the sociocultural stereotype of being fallen women undeniably affects the study outcomes and points to a considerable failure in managing this type of campaigns in a conservative community, it both needs further investigation and proposes implementing other creative practices to promote social awareness for the sake of good women's health without jeopardizing their reputation.

7. LIMITATION

The sample was limited to female students in Hail University.

The answers come from self-respondent of a questionnaire which may subject to random selections of answers.

8. CONCLUSION

In conclusion, the knowledge of HPV infection and vaccine is low. More than two-third of students do not know that HPV is a preventable disease. Attending the campaigns are not enough to encourage young women to be aware of the importance of taking the vaccine as preventive measure against danger of cervical cancer.

The Ministry of Education should add curricula targeting female students to educate them about gynaecological health issues, sexually transmitted diseases and how to avoid them. Furthermore, the governmental institutions should support health education and spread awareness about the recent medical guidelines about HPV, gynaecological vaccines, and cervical cancer. Also, that government must provide examination as well as vaccination for HPV for free to promote diagnosis and prevention of such furious disease [8].

Ethics considerations

The Research and Ethical Committee approved the present study. Written informed consent was obtained from all participants in the study. The research and its purpose were explained to the participants, who were also informed that the extracted information would be used only for research purposes and kept confidential. Participation in the study was voluntary.

9. ACKNOWLEDGMENTS

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10. REFERENCES

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