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Knowledge and attitude regarding cervical cancer and its prevention among young female adults in Kuantan, Malaysia

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Abstract:

BACKGROUND: Cervical cancer is the second-most common female cancer in Malaysia after breast cancer. This study intended to investigate the knowledge and attitude regarding cervical cancer and its prevention and its associated factors among young female adults in Kuantan, Malaysia, to gauge the community's understanding and idea about this issue.

MATERIALS AND METHODS: The study was conducted in attractive places in Kuantan, Malaysia, such as shopping malls and Urban Transformation Centre, using a cross-sectional study design and convenience sampling method. Data on the respondents' knowledge and attitude regarding cervical cancer and its prevention were collected using a questionnaire. Kruskal–Wallis, Independent *t*-, and Pearson correlation tests were used to investigate the study variables' association using SPSS software.

RESULTS: From the total of 142 respondents, almost half of them aged between 20 and 24 years old with the majority were Malays (85.9%) and single (74.6%). The internet (78.1%) was identified as the main medium to gain information regarding cervical cancer. The results show that levels of education, races, and occupation types were statistically significantly associated with the respondents' knowledge and attitude scores in this study. Age was found to be associated with knowledge scores only, while marital status was only significantly associated with the attitude scores regarding cervical cancer and its prevention. Knowledge scores were also found to be positively associated with attitude scores.

CONCLUSION: Several socio-demographic factors were significantly associated with the knowledge and attitude regarding cervical cancer and its prevention. In view of the positive association between knowledge and attitude scores, suitable health promotion activities can be designed and planned to increase young female adults' knowledge and attitudes toward cervical cancer and its prevention.

Keywords:

Attitude, cervical cancer, knowledge, Malaysia, young female adults

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Introduction

Cervical cancer is the second-most common cancer among women in Malaysia after breast cancer.^[1] Cervical cancer can be caused by the high-risk human papillomavirus (HPV) type-16 and 18, and the symptoms may only manifest after decades of infection.^[2,3] HPV is the virus that will infect both men and women, and

it can be transmitted through skin-to-skin contact, which can be categorized into two types; high risk and low risk.^[4] Multiple studies reported that HPV vaccination has perfect efficacy against HPV infection and is being used worldwide in a strategy to prevent cervical cancer.^[5-7] The vaccine helps to prevent at least 70% of the occurrence of this cancer. The vaccine is given to young female adults, especially before the onset of their sexual activity, and acts as prophylaxis;

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hence, it will no longer be effective if they have already been infected with HPV.^[8-10]

In Malaysia, cervical cancer has been identified as among the top 10 cancers from 2007 to 2011, and the Malaysian Cancer Registry Report had documented 4352 patients.^[11] Surprisingly, this number doubled to five to six cases per day in 2012, when the total number of new cervical cancer cases was 2145.^[1] Appropriate actions need to be carried out to prevent this number from keep on arising. One of the Malaysian government's steps to overcome this problem is introducing the free HPV vaccination to all eligible young women.^[12] On top of that, health staff from the Malaysian Ministry of Health routinely go to secondary schools yearly to vaccinate the form one school girls, as they are the best age group to be vaccinated before participating in any sexual activity at a later age.^[7]

Unfortunately, many Malaysians refused HPV vaccination due to their lack of knowledge and awareness.^[13] Earlier studies reported that some school children, people who live in rural areas, and even university students have a low level of knowledge regarding cervical cancer and its prevention.^[14,15] "Prevalence of sexual intercourse among Malaysian adolescents was relatively low compared to developed countries. However, certain groups of adolescents tend to be at higher risk of engaging in sexual intercourse."^[16] Moreover, another research revealed that obstructions to sex education are a time-consuming scheme. In addition, multicultural society of Malaysia act as an obstacle to national sexuality education, and researchers thought that school-based sex education is not an easy issue to accomplish in Malaysia. This study intends to evaluate the knowledge and attitudes regarding cervical cancer and its prevention among young female adults in Kuantan, Malaysia, as they are part of the population at risk of getting this disease.^[17]

Conceptual framework of the study

The relationship between the demographic characteristics, knowledge, and attitude regarding cervical cancer and its prevention is shown in Figure 1. It illustrates the relationship between factors that may affect the attitude regarding cervical cancer. The possible factors include socio-demographic characteristics (age, levels of education, races, types of occupation, and marital statuses) and knowledge toward cervical cancer and its prevention.

Materials and Methods

Study Design and setting

This study used a cross-sectional study design to determine whether there is an association between knowledge and attitude regarding cervical cancer and

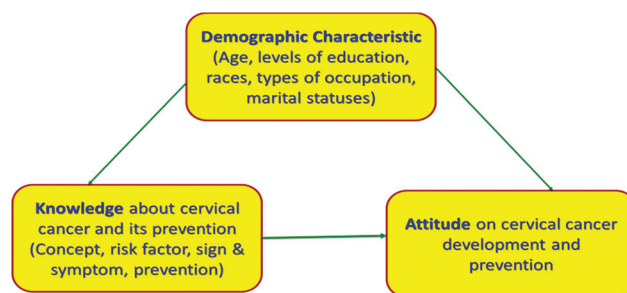


Figure 1: Relationship between socio-demographic, knowledge, and attitude regarding cervical cancer and its prevention

its prevention among young female adults in Kuantan. The age of young adults included in this study was between 18 and 39 years old as a standard age range from the human psychological development stage for young adults.^[18]

This study was conducted at attractive places in Kuantan, Malaysia, such as shopping malls, Kuantan Urban Transformation Centre, and the Government's Nur Sejahtera Clinic meant for female reproductive consultations.

Study participate and sampling

The population included in this study was female, young adults (18–39 years old) who lived in Kuantan.

The sample size was calculated using a single proportion formula to determine the number of respondents needed in this study. The value of proportion was adapted from an earlier Malaysian study.^[19] The precision used was 0.05, and the confidence interval was set at 95%. The calculated sample size was 114, added with a 10% nonresponse rate, which resulted in the estimated sample size of 126.

The convenient sampling method was used. This process was based on the willingness of the volunteered respondents.

Female, 18–39 years old, Kuantan residents (minimum of 1 year residing in Kuantan). Exclusion Criteria: Unable to read or understand the questionnaire, had a history of cervical cancer. Data collection was conducted from April to May 2017.

Study collection and techniques

The data were collected using a self-administered questionnaire. The questionnaire was constructed from the literature review of previous studies. It includes Part A: Socio-demographic data, including age, levels of education, races, types of occupation, and marital status. Part B: Knowledge regarding cervical cancer and its prevention with the answer choices of "true,"

“false” and “do not know,” and finally Part C: Attitudes toward cervical cancer and its prevention with five Likert scales answer choices of “strongly agree” to “strongly disagree.” The questionnaire was prepared in Bahasa Malaysia (the national language of Malaysia). The expert verified the questionnaire’s content, and a pilot study was done before the real survey to check the questionnaire’s face validity to ensure the questionnaire’s understandability.

The scoring system used in this study for the questions on knowledge and attitude regarding cervical cancer and its prevention is summarized in Table 1, while the knowledge was classified as “good” if the scores were between 25 and 31 (full marks), “moderate” for scores between 16 and 24 and “poor” for scores between 0 and 15.

The data were analyzed using IBM Statistical Package for Social Sciences (SPSS) version 23 (IBM Corp. in Armonk, NY, USA). Descriptive statistics were used to describe the respondents’ socio-demographic factors and their answers for the knowledge and attitude regarding cervical cancer and its prevention using frequencies and percentages. To assess the factors associated with knowledge and attitude regarding cervical cancer and its prevention, the Kruskal–Wallis test was used for comparing between more than two groups because the normality could not be assumed which violated the use of parametric test ANOVA. On the other hand, an independent *t*-test was used for comparing between two independent groups. Pearson correlation test was used to find the association between two quantitative or numerical variables. The significance level was set at 0.05 for the 95% confidence interval for the inferential statistics. Ethical Consideration and Approval of Study: Ethical approval was granted by the Faculty Postgraduate and Research Committee, Faculty of Allied Health Sciences (Reference No.: IIUM/310/G/13/4/4-199, Dated: April 6, 2017). The responses from the respondents were voluntary and anonymous. All information by the respondents was kept private and confidential. The written informed consent was obtained from each respondent before the data collection.

Results

A total of 142 respondents aged 18–39 years old were recruited in this study, where their mean age was 26.0 ± 5.18 years old. The participants’ characteristics are integrated into Table 2 as frequency and percentages, where it can be seen that majority of the respondents are Malay ($n = 122, 85.9\%$) and single ($n = 106, 74.6\%$).

From the answers given by the respondents, 130 (91.5%), 111 (78.2%), and 87 (61.3%) of them had heard

about cervical cancer, HPV vaccination, and Pap smear, respectively. Their source of information regarding the subject matter is summarized in Figure 2, where most of them got the information from the internet (71.8% [$n = 102$]), followed by television and health professionals with 57% ($n = 81$) and 43% ($n = 61$) respondents, respectively.

Classification of the knowledge scores resulted in more than half of the respondents (52.8% [$n = 75$]) were categorized as having a moderate level of knowledge regarding cervical cancer and its prevention, whereby 45.1% ($n = 64$) of them had a low level of knowledge. Only 2.1% ($n = 3$) of them had good knowledge regarding these topics.

Summary of the respondents’ answers on the knowledge regarding cervical cancer and its prevention is illustrated in Table 3. Only a few (15.5% [$n = 22$]) respondents knew that this cancer’s symptoms do not manifest at the early stage of the disease. The current study respondents were familiar with the risk factors of this cancer, with many of them answered correctly for multiple sex partners and poor vaginal hygiene (69.0% [$n = 98$]) and 63.4% ($n = 90$) respondents, respectively.

Table 1: Scoring system for knowledge and attitude regarding cervical cancer and its prevention

Section	Score			
	Positive statement	Score	Negative statement	Score
Knowledge	No	0	Yes	0
	Do not know	0	Do not know	0
	Yes	1	No	1
Attitude	Strongly disagree	1	Strongly agree	1
	Disagree	2	Agree	2
	Not sure	3	Not sure	3
	Agree	4	Disagree	4
	Strongly agree	5	Strongly disagree	5

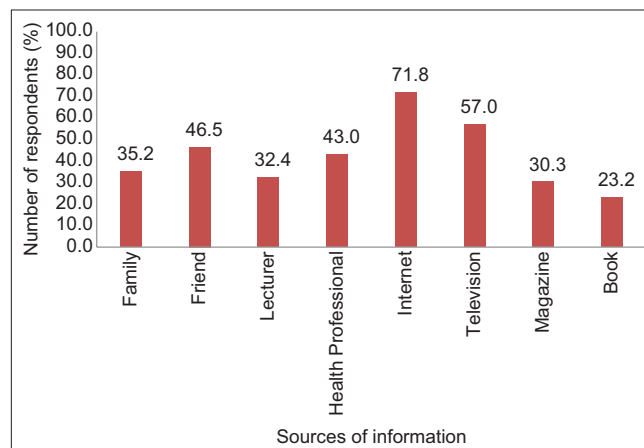


Figure 2: Sources of information regarding cervical cancer and HPV vaccination among respondents ($n = 142$)

Table 2: Comparing the total knowledge and attitude scores regarding cervical cancer and its prevention between different sociodemographic characteristics using the Kruskal-Wallis test ($n=142$)

Items	Frequency (%)	Knowledge		Attitude	
		Median (IQR)	<i>P</i>	Median (IQR)	<i>P</i>
Levels of education					
Secondary school	34 (23.9)	13.0 (8)	<0.001	50.5 (13)	0.048
Diploma	51 (35.9)	17.0 (8)		54.0 (13)	
Bachelor's degree	51 (35.9)	19.0 (7)		57.0 (9)	
Postgraduate degree	6 (4.2)	14.5 (8)		56.5 (4)	
Races					
Malay	122 (85.9)	17.0 (7)	0.004	55.0 (11)	0.038
Chinese	17 (12.0)	12.0 (15)		50.0 (12)	
Indian	3 (2.1)	18.0 (7)		57.0 (NA)	
Types of occupation					
Government	27 (19.0)	19.0 (6)	<0.001	57.0 (11)	0.003
Private	51 (35.9)	16.0 (7)		52.0 (11)	
Self-employed	12 (8.5)	11.0 (14)		47.0 (17)	
Housewife	5 (3.5)	13.0 (8)		52.0 (16)	
Student	47 (33.1)	18.0 (7)		56.0 (10)	
Marital status					
Single	106 (74.6)	15.1 ^c (6.08 ^d)	0.087 ^e	53.0 ^c (8.03 ^d)	0.035 ^e
Married/divorced	36 (25.4)	16.8 ^c (4.70 ^d)		56.1 ^c (7.29 ^d)	

^aMean, ^bSD, ^cIndependent *t*-test. IQR=Interquartile range, SD=Standard deviation

Summary of the respondents' answers on attitude regarding cervical cancer and its prevention is shown in Table 4. From the 142 respondents, 82.4% ($n = 117$) believed that they should seek treatment if they were diagnosed with cancer. Nevertheless, only 33.1% ($n = 47$) of respondents felt that they were at risk of getting cancer, while more than half of them (57.0% [$n = 81$]) neither agreed nor disagreed that they were at risk of it. In general, their attitude toward HPV vaccination was more toward the positive side even though many were unsure about their choices.

There was a statistically significant correlation between the total knowledge scores regarding cervical cancer and its prevention with the age of the respondents ($P = 0.046$). However, the $r = 0.168$ signifies that the positive correlation was very little, indicating that the level of knowledge was just a bit higher as one's got older. On the other hand, the association between age and the total attitude scores regarding cervical cancer and its prevention was not significant ($r = 0.128$, $P = 0.130$).

The other factors investigated in this study were education, races, and occupation types using the Kruskal-Wallis test, as shown in Table 2. All the three factors show significant association with the total knowledge and attitude scores regarding cervical cancer and its prevention ($P < 0.001-0.048$); hence, *post hoc* tests were carried out to find the pairs that show a significant difference in knowledge and attitude as shown in Table 5.

From the median values in Table 2 and the *P* values in Table 5, it can be concluded that the knowledge of those

with a diploma and bachelor's degree was higher than those with only secondary school education. Similarly, the knowledge of Malays was significantly better than Chinese, and the knowledge of those who worked in the government sectors was significantly higher than those who worked in the private sectors, self-employed, and homemakers. Another conclusion that can be made regarding knowledge is that students' knowledge was significantly better than those who were self-employed.

In terms of attitude, the median values in Table 2 and the *P* values in Table 5 show that again the total attitude scores regarding cervical cancer and its prevention of Malays are significantly higher than Chinese, and attitudes of those in government sectors are significantly better than those in private sectors. Even though the Kruskal-Wallis test for comparing the total attitude scores regarding cervical cancer and its prevention between the different levels of education shows significant results, the study's power is not enough to detect the significant pairs from the *post hoc* test. However, the lowest *P* value of the *post hoc* test in comparing the total attitude scores between the different levels of education ($P = 0.069$) might indicate that those with bachelor's degrees were better than those with secondary schools education.

Table 2 also shows the comparison of the total knowledge and attitude scores regarding cervical cancer and its prevention between single and married or divorced respondents using independent *t*-test. The results show that the total attitude scores among married or divorced respondents are higher than single respondents, but no significant difference was observed for the total knowledge scores.

Table 3: Knowledge regarding cervical cancer among respondents (n=142)

Statement	Frequency (%)		
	True	False	Do not know
Regarding cervical cancer			
It may be caused by HPV	89 (62.7)	5 (3.5)	48 (33.8)
It is one of the main fatal cancer in women	122 (85.9)	3 (2.1)	17 (12.0)
All adult women are at risk to get the cancer	93 (65.5)	7 (4.9)	42 (29.6)
Symptoms manifest at the disease's early stage	63 (44.4)	22 (15.5)	57 (40.1)
It is a preventable disease	99 (69.7)	5 (3.5)	38 (26.8)
It can be treated at an early stage	110 (77.5)	-	32 (22.5)
Risk factor/s of cervical cancer is/are			
HIV infection	61 (43.0)	17 (12.0)	64 (45.1)
Multiple sex partners	98 (69.0)	9 (6.3)	35 (24.6)
Smoking	41 (28.9)	38 (26.8)	63 (44.4)
Mothers with less number of children	11 (7.7)	55 (38.7)	76 (53.5)
Poor vaginal hygiene	90 (63.4)	14 (9.9)	38 (26.8)
Sign/s and symptom/s of advanced cervical cancer are/are			
Longer menstrual period	63 (44.4)	10 (7.0)	69 (48.6)
Bleeding after intercourse	68 (47.9)	3 (2.1)	71 (50.0)
Bleeding after menopause	44 (31.0)	11 (7.7)	87 (61.3)
Pain during urination	67 (47.2)	7 (4.9)	68 (47.9)
Abnormal vaginal discharge	93 (65.5)	3 (2.1)	46 (32.4)
Cervical cancer can be prevented by			
Preventing with HPV infection	94 (66.2)	5 (3.5)	43 (30.3)
Practicing healthy sexual activity	110 (77.5)	7 (4.9)	25 (17.6)
Getting HPV vaccination	127 (89.4)	-	15 (10.6)
Undergoing Pap smear test	100 (70.4)	6 (4.2)	36 (25.4)
Regarding HPV vaccination			
Malaysian government offers free vaccination	114 (80.3)	2 (1.4)	26 (18.3)
It is exclusively for females	125 (88.0)	1 (0.7)	16 (11.3)
It as a treatment for cervical cancer	98 (69.0)	25 (17.6)	19 (13.4)
It is excellent in preventing cervical cancer	95 (66.9)	6 (4.2)	41 (28.9)
It should be taken before sexual activity starts	70 (49.3)	15 (10.6)	57 (40.1)
Vaccinating males can reduce the incidence of cervical cancer	21 (14.8)	49 (34.5)	72 (50.7)
Regarding Pap smear			
It is provided for free at government health facilities in Malaysia	80 (56.3)	7 (4.9)	55 (38.7)
It is a procedure where a cell sample will be collected from a woman's cervix	83 (58.5)	6 (4.2)	53 (37.3)
It can detect other sexually transmitted diseases	75 (52.8)	11 (7.7)	56 (39.4)
Mothers who plan to have no more children do not need to do Pap smear anymore	25 (17.6)	44 (31.0)	73 (51.4)
A woman who had a hysterectomy done (removal of the uterus only) does not need to do a Pap smear anymore	31 (21.8)	19 (13.4)	92 (64.8)

*Correct answers are in bold. HPV=Human papillomavirus

Figure 3 shows the relationship between the respondents' total knowledge and attitude scores regarding cervical cancer and its prevention. The Pearson correlation test demonstrated a highly significant fair positive linear correlation between the respondents; total knowledge and attitude scores ($P < 0.001$). The $r = 0.428$ indicated that higher the respondents' total knowledge scores, their total attitude scores toward cervical cancer and its prevention are higher.

Discussion

Cervical cancer is one of the female's leading cancers in Malaysia. The incidence number of this cancer keeps increasing despite the introduction of preventive

measures by the health authority. As it is believed that knowledge is a powerful tool that could lead a person to act wiser, the research was done to study the level of knowledge and attitude regarding cervical cancer among young female adults in the Kuantan population.

In this era of advanced technology, information can easily be accessed through smartphones and laptops if one has internet access available to them. Thus, it was not surprising that most respondents chose the internet as the most common medium to obtain knowledge. This is in line with the study of knowledge and views of cervical cancer among secondary school students, where the majority voted the internet as the effective medium to

Table 4: Attitude regarding cervical cancer and its prevention among the respondents (n=142)

Statement	Strongly disagree and disagree, n (%)	Not sure, n (%)	Strongly agree and agree, n (%)
Attitude toward cervical cancer			
I think it is a serious illness	5 (3.5)	13 (9.2)	124 (87.3)
I am at risk of getting cervical cancer	14 (9.9)	81 (57.0)	47 (33.1)
It is very important to do regular pap smear	13 (9.2)	38 (26.8)	91 (64.0)
I will not seek treatment even if the cancer is at an advanced stage	117 (82.4)	15 (10.6)	10 (7.0)
I believe there is no cure for this cancer when the cancer is at an advanced stage	44 (31.0)	61 (43.0)	37 (26.0)
Attitude toward cervical cancer prevention			
Vaccination should be made compulsory to females	7 (4.9)	17 (12.0)	118 (83.1)
Getting vaccinated is scary	87 (61.3)	40 (28.2)	15 (10.6)
Getting vaccinated is painful	75 (52.8)	47 (33.1)	20 (14.1)
HPV vaccination is not safe for me	94 (66.2)	35 (24.6)	13 (9.2)
I don't think HPV vaccination will prevent HPV infection	79 (55.6)	46 (32.4)	17 (12.0)
HPV vaccination may encourage people to have sex at an early age	80 (56.3)	49 (34.5)	13 (9.2)
HPV vaccination may encourage people to have multiple sexual partners	81 (57.0)	44 (31.0)	17 (12.0)
My parents might not allow me to get the HPV vaccination	102 (71.8)	32 (22.5)	8 (5.6)
My religion prohibits me from receiving HPV vaccination because it is sex related	108 (76.1)	26 (18.3)	8 (5.6)
After getting married, I'll ensure myself to go for Pap smear test frequently	8 (5.6)	36 (25.4)	98 (69.0)

*Expected attitude are in bold. HPV=Human papillomavirus

Table 5: Post hoc test comparing knowledge and attitude scores regarding cervical cancer between groups (n=142)

Group 1	Group 2	P*	
		Knowledge	Attitude
Levels of education			
Secondary school	Diploma degree	0.006	
	Bachelor's degree	0.000	
Races			
Malay	Chinese	0.003	0.032
Types of occupation			
Government	Private	0.037	0.008
	Self-employed	0.002	
	Housewife	0.023	
Self-employed	Student	0.006	

*Bonferroni concept, showing the significant results only

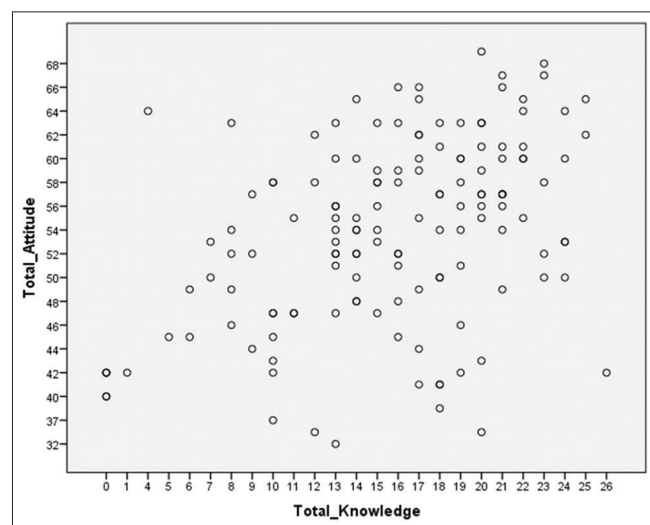


Figure 3: Relationship between the total knowledge and attitude scores regarding cervical cancer and its prevention among the respondents (n = 142)

gain information.^[15] In contrast, another study revealed that the internet was the most unfavorable method, and instead, they chose friends or family members as the influential source of knowledge regarding cervical cancer.^[20] To spread information about this disease among young female adults, books and magazines might not be very effective as the result of this survey proved that these two options were the least popular methods of gaining information among the respondents.

Kuantan state in Malaysia is a mixture of urban and suburban areas. Multiple studies show that women's living area causing them to have a different knowledge level with better knowledge was found among those living in an urban area.^[21,22] Another study conducted in a rural area in Southeast Asia shows that most women have poor knowledge regarding cervical cancer.^[23] This trend is almost the same in this study, as nearly half of the respondents had low knowledge regarding cervical cancer and its prevention.

Almost all respondents knew that HPV vaccination is a preventive measure for HPV infection and can also be administered to boys. As HPV is always associated with cervical cancer, it somehow creates the mentality that this virus may affect females only. While Malaysians are fighting to generate awareness for women to go for the vaccination, developed countries such as Australia have already introduced the HPV vaccination program for males.^[24,25] However, at least 14.8% of the respondents claimed that vaccinating males can reduce the HPV infection, thus indirectly reducing the number of cervical cancer cases. A study was conducted to know the perception of boys regarding HPV vaccination in Italy, which shows positive results in most respondents.^[26]

Despite having moderate knowledge of cervical cancer, most of the respondents had a positive attitude toward cervical cancer and its prevention. The majority were willing to seek treatment if they were infected with the disease and try to take the measures outlined to prevent this disease. This situation is similar to multiple previous studies conducted in Malaysia, where most respondents showed a positive attitude toward cervical cancer and its prevention.^[15,23] A similar trend was observed in developing countries such as India and developed countries such as England.^[27,28]

Five socio-demographic characteristics were analyzed as factors that may influence the results of knowledge and attitude regarding cervical cancer among young female adults in this study, namely age, levels of education, races, marital statuses, and occupation types. This study found that older respondents had a better level of knowledge regarding cervical cancer and its prevention. When one grows older, they will have a better experience and indirectly allow them to perceive more knowledge. In this study, as the correlation between age and knowledge regarding cervical cancer and its prevention was small, the trend was almost the same as other studies conducted in Malaysia and Italy, which found that age does not correlate with knowledge on cervical cancer.^[14,20]

Education levels might have an impact on someone's knowledge.^[29] In this study, students' knowledge level with a diploma and bachelor's degree was higher than those with only secondary school education. This is expected because diploma and bachelor's degrees are classified as tertiary education, a higher education level than secondary school. The result of this study is supported by the finding from previous research.^[23] A similar trend was also observed for the attitude in this study. China is known for the low percentage of cervical cancer incidence, which is believed due to the low average parity compared to the world's average among women. As multiparity is associated with cervical cancer, the implementation of "one family one child" may influence their average parity. However, this is not the case in Malaysia, a multi-ethnicity country, where it was found that the Chinese have the highest rate of cervical cancer followed by Indian and Malay based on the data from Malaysian Cancer Statistic 2006.^[30]

This study found a significant difference in terms of knowledge and attitude regarding cervical cancer and its prevention between Chinese and Malay. In line with the prevalence of cervical cancer in Malaysia, Malays who were recorded as having the lowest prevalence of cervical cancer scored highest in knowledge and attitude regarding cervical cancer and its prevention in the current study. Their awareness may influence this

in preventing this disease. The same trend was found in earlier studies.^[19,23]

Cervical cancer is usually detected when a woman is around 40 years old and above, with a mean of 49 years old, as the HPV needs some time to cause changes in the cervix, which sometimes took decades after the initial infection.^[31] Usually, people are already married at this age (40 years and above) and have their own family. Thus, though marital statuses have no association with knowledge scores in this study, married respondents had significantly better attitude scores than single. A married woman might feel more on the need to take care of themselves as their risk to get cervical cancer increases. The same goes for the study conducted in Bhopal, India, where the attitude is mostly positive even though the majority's knowledge scores were poor.^[32]

The environment plays a role in shaping one's personality. Thus, it is essential to identify whether their work scope influences the respondents' knowledge and attitude toward cervical cancer. In this study, government officers scored the highest level of knowledge and attitude regarding cervical cancer and its prevention. As a government official, they have some advantages in health treatment, and there were always programs held for them, which might eventually increase their knowledge of cervical cancer and its prevention. For example, the Ministry of Woman, Family, and Development co-host an awareness campaign regarding cervical cancer in collaboration with a private university in Malaysia.^[33] Whereas, the self-employed people might be pre-occupied with their job, working hard to better their business.

This study found a significant difference in terms of attitude scores between private workers and government officers. It could be expected because the nature of the work itself might influence their attitude, which is in line with another study.^[34] In general, we know that the public sector's basic objective is to serve the country's citizens while the private sector might be more profitable. Even in the private sector, people tend to be more competitive as their basis for promotion is based on merit, unlike the public sector, which favors the concept of seniority.^[35] This different work nature is believed to have influenced someone's decision-making process, including in health-care matters.

Background personal data of a person might influence what they perceive as knowledge in their lives. One might feel and act out according to what they knew or based on what they believe. This study proved that one's knowledge had a significant association with their attitude, and in this case, in cervical cancer-related issues. Another research also indicated

almost the same trend where most women had positive attitudes when they had better knowledge about this matter.^[19,27]

Limitation of study

As in any study conducted, there were some limitations faced in conducting this study. Due to time and resource limitations, the respondents in this study were selected using convenience sampling, a nonrandom sampling method; thus, selection bias might come into play, and the result might reflect the view of specific groups but not the entire population. In this study, the respondents were approached at the attractive places in Kuantan; thus, the results might differ if the sampling was done systematically at all residential areas in Kuantan using the probability sampling method. On the other hand, the cross-sectional study design only allows for determining the association between variables, not for the cause-and-effect relationship.

Most respondents were single, which could be due to the convenience sampling was adopted. Stratified random sampling would be the best option to have a diverse response, including married respondents. Researchers expected that single research respondents might not have experience in sex because the culture and religion in Malaysia do not encourage sex before marriage. This research could not establish extra and premarital sexual practice since it was not actively researched in this study. In addition, this study could not ascertain the age of the first sexual intercourse and the number of sex partners and utilization of condoms during the data uptake; we did not incorporate these questions in our study instrument. Moreover, currently, this research project had been finalized. In the next research, we will incorporate these ideas and disseminate these findings for local context.

Conclusion

This study revealed the knowledge and attitude regarding cervical cancer and its prevention among young female adults in Kuantan, Malaysia. Internet was the most common medium to gain information regarding cervical cancer. Overall, the respondents have a moderate level of knowledge and positive attitudes toward cervical cancer and its prevention. The results showed that levels of education, races, and occupation types were statistically significantly associated with the respondents' knowledge and attitude scores in this study. Age was significantly associated with knowledge scores only, while marital status was only significantly associated with the attitude scores regarding cervical cancer and its prevention. Knowledge scores were also found to be positively associated with attitude scores.

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Conflicts of interest

There are no conflicts of interest.

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