KNOWLEDGE, AWARENESS, AND PERCEPTION OF HPV TESTING AMONG STAFF OF UNIVERSITI PUTRA MALAYSIA 2020

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by

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ABSTRACT

Introduction: The HPV test is a laboratory test in which the cells are tested for human papillomavirus (HPV). HPV is a sexually transmitted virus and it is the most common cause of reproductive tract viral infection. It can be classified into two types; high risk type (type 16 and 18) and low risk type (type 6 and 11). HPV is commonly associated with cervical cancer but it can also lead to other cancers such as oropharyngeal cancer, anal cancer, and so on. The risk of HPV infection can be reduced by cervical cancer screening programme which includes Papanicolaou (Pap) smear and HPV testing. HPV testing is more effective and safer compared to cytology screening as it has higher sensitivity. Unlike Pap smear, HPV test is able to differentiate between high and low risk type HPV.

Malaysia had implemented the national programme of HPV vaccination in order to reduce the prevalence of cervical cancer. In the past years, several sociodemographic factors are proven to be significantly associated with the knowledge, awareness, and perception of HPV testing. This includes age, gender, ethnicity, marital status, sexual activity, and level of education. This study aimed to measure the association between sociodemographic factors and knowledge, awareness, and perception of HPV testing.

Materials and methods: A cross-sectional study was conducted among staff of Universiti Putra Malaysia (UPM). Convenience sampling was used in this research. Data of the study population was collected using Google Form based questionnaire. Data was analysed using SPSS Version 26.0. Pearson's Chi-Square test, Fisher's Exact test, Mann-Whitney U test, and Kruskal-Wallis test were used to measure the associations between the variables.

Results: A total of 166 eligible respondents participated in the research. All data was reviewed and recorded. Significant associations were found between knowledge and gender, knowledge and ethnicity, and awareness and gender. No significant association was found between perception and any of the sociodemographic factors.

Conclusion: This study revealed that majority of the respondents' level of knowledge on HPV testing was poor. Being female and Chinese is associated with better knowledge on HPV testing among UPM staff. Females are also associated with higher level of awareness on HPV testing.

Keywords: Knowledge, Awareness, Perception, HPV testing.

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CHAPTER 1

INTRODUCTION

1.1. Background

The World Health Organisation (WHO) states that Human papillomavirus (HPV) constitutes the most common cause of reproductive tract viral infection. Most women and men who are sexually active may get infected at some stage in their life and some might get infected repeatedly. HPV is sexually transmitted, but coitus is not necessarily required for the transmission to occur. It can also be transmitted by skin or mucosal contact (Burchell et al., 2006). HPV can be classified into low and high risks types. Low risk HPV (namely type 6 and 11) can cause genital warts and respiratory papillomatosis, while high risks HPV (especially type 16 and 18) can lead to cervical cancer. Nearly all cervical cancer cases (99%) are linked to genital infection with HPV (Walboomers et al., 1999). Seventy percent of cervical cancer is caused by HPV types 16 and 18 (Bosch et al., 2002). Even though HPV is mostly associated with cervical cancer, it can lead to other types of cancers as well. HPV-related cancers include oropharyngeal cancers, anal cancer, penile cancer, vaginal cancer, and vulvar cancer. In spite of the fact that most HPV infections resolve spontaneously, there is risk that the infection may become chronic leading to development of precancerous lesions which later progress to invasive cervical cancer. There are several risk components for HPV persistence and development of cervical cancer, which include the HPV type, the immune status of the individual, coinfections with other sexually transmitted agents, parity and tobacco smoking.

The most common HPV infections found were HPV16 (35.7%), HPV18 (26.0%), HPV58 (9.1%), and HPV33 (7.1%) single-type infections, followed by HPV16 + HPV18 co-infections (5.2%) (Tan et al., 2018). Elbardiny et al. in 2014 conducted a cross-sectional study on the level of knowledge and attitude regarding HPV and their associated factors among 450 staff from various faculties, institutes, centres, and schools in public universities in Malaysia. They conclude that most of the respondent's level of knowledge on HPV was unsatisfactory and poor on top of having negative attitude and perception towards HPV infection. In a study that was conducted among female university students in Malaysia, only 21.7% and 10.3% of the respondents have heard about HPV and HPV vaccination respectively (Wong et al., 2010). Women in Malaysia only have good awareness about multiple sexual partners and sexually transmitted disease as a risk factor for cervical cancer, and acknowledge that regular pap smear as a tool to diagnose it and recognise that it can be treated surgically (Lee et al., 2018). An exfoliative cervical cytology, the papanicolaou (pap) smear decreases mortality and morbidity of cervical cancer in developed countries and remains as the population-based screening program. Malaysia implemented the national program of HPV vaccination in order to reduce the morbidity and mortality of cervical cancer (Safaeian et al., 2007). Several public health programmes were executed to control and prevent cervical cancer including free screening of carcinoma in-situ using pap smear, free HPV vaccination, and educational programmes. Although the acceptance of HPV vaccine is relatively high, there are still people refusing to take the vaccine due to unresolved doubts on the vaccine's safety, efficacy, as well as the "halal" status issue among the uncertain. Future effort is needed to increase the awareness and perception towards HPV. Therefore, we aim to conduct a study to observe the knowledge, perception, and awareness of HPV testing among UPM staff.

1.2. Problem statement

HPV is the most common viral infection that can cause abnormal cell changes and if not treated, can lead to cervical cancer. One of the preventive measures that can be taken to avoid this is by doing cervical cancer screening which consists of Pap Smear and HPV testing. However, most people are still unfamiliar with HPV testing as compared to pap smear. There is still a lack of knowledge and awareness programmes on HPV testing. Some people even have negative perceptions towards HPV testing which lead to lack of participation in cervical cancer screening. This occurs due to costs, embarrassment, discomfort or pain, fear of getting positive results which may cause anxiety and lack of time.

This phenomena is a concern because by increasing knowledge and awareness on HPV testing, it can be the key to reduce morbidity and mortality of cervical cancer which is one of the common cancers in Malaysia. Therefore, the purpose of this study is to determine the knowledge, awareness and perception of HPV testing among UPM staff.

1.3. Significance of study

The findings in this study will:

1. Assess current level of knowledge of HPV testing among UPM staff.
2. Evaluate perception and psychological implication of HPV testing among UPM staff.
3. Provide beneficial data to create programmes in order to improve awareness on HPV testing among UPM staff which help to reduce morbidity rate of cervical cancer.

1.4. Research question

1. What are the sociodemographic factors (age, gender, ethnicity, level of education, sexual activity, relationship status) among UPM staff?
2. What is the knowledge, awareness, and perception of HPV testing among UPM staff?
3. Is there any association between the sociodemographic factors (age, gender, ethnicity, level of education, sexual activity, relationship status) and the knowledge, awareness, and perception of HPV testing among UPM staff?

1.5. Objectives

1.5.1. General objective

1. To determine the knowledge, awareness, and perception of HPV testing among UPM staff.

1.5.2. Specific objectives

1. To determine the sociodemographic factors (age, gender, ethnicity, marital status, sexual activity, level of education) among UPM staff.
2. To determine the level of knowledge of HPV testing among UPM staff.
3. To determine the level of awareness of HPV testing among UPM staff.
4. To determine the level of perception of HPV testing among UPM staff.
5. To determine the associations between sociodemographic factors (age, gender, ethnicity, marital status, sexual activity, level of education) and the knowledge, awareness, and perception of HPV testing among UPM staff.

1.6. Research hypothesis

1.6.1. Null hypothesis

1. The knowledge, awareness, and perception of HPV testing is good among UPM staff.
2. There is no significant association between sociodemographic factors (age, gender, ethnicity, marital status, sexual activity, level of education) and the knowledge, awareness, and perception of HPV testing among UPM staff.

1.6.2. Alternative hypothesis

1. There are significant association between sociodemographic factors (age, gender, ethnicity, marital status, sexual activity, level of education) and the knowledge, awareness, and perception of HPV testing among UPM staff.

CHAPTER 2

LITERATURE REVIEW

2.1. HPV testing

2.1.1. Knowledge of HPV testing

According to the Cambridge dictionary, knowledge is the understanding of or information about a subject that you get by experience or study, either known by one person or by people generally. According to the National Cancer Institute, HPV testing is a laboratory test in which the cells are tested on various types of human papillomavirus (HPV). Human papillomavirus (HPV) is the main source of common sexually transmitted infection that can be linked to genital warts and it is responsible for about 99.7% of cervical cancer cases. Research has shown that HPV test has been used as the cervical screening in particular the high risk HPV type (16 and 18). Study by Lew et al.,2013 concluded that cancer precursors can be detected early by doing HPV testing and this test is more effective compared to cytology screening as it is safer and is able to reduce harm from frequent screening exposure. Pap test or liquid-based cytology has been used traditionally to screen cervical cancer. However, these techniques have disadvantages of having poor sensitivity, poor reliability, and will take a long time to receive test results (Arbyn et al., 2008).

Ranco et al. 2010 found that HPV testing has high sensitivity in detecting CIN2 or worse. HPV test can be done using the same sample from Pap smear test or can be taken for the second time from the cervical canal. Unlike Pap test, HPV tests are able to differentiate between high or low risk type HPV. If a person is infected with a high-risk HPV that is linked

to cervical cancer, the HPV test will appear positive for High Risk HPV type. On the other hand, if the test is negative, this means the person is free from HPV types that are linked to cervical cancer and they should be screened again in 3-5 years.

An international survey done in the USA, UK, and Australia found that among those who had heard of HPV testing, the mean knowledge score was 2.78 out of 6 (Dodd et al., 2014). There were no significant differences in knowledge scores between these countries.

2.1.2. Awareness of HPV testing

Awareness is defined as an understanding of a knowledge, situation or subject at the present time based on information or experience. An international survey completed among 2409 men and women in the USA, the UK, and Australia found that 61% had heard of HPV (Dodd et al.,2014). In the subsample who were aware of HPV, 50% had heard of HPV testing. Awareness of HPV testing was higher in the USA (62%) than the UK (44%) and Australia (40%).

The survey examined the associations between demographic variables and awareness of HPV testing, and found that awareness of HPV testing is associated with age, education level, gender, and ethnicity.

2.1.3. Perception of HPV testing

Perception is defined as a belief or opinion, often held by many people and based on how things seem. The human papillomavirus (HPV) test, administered alone without the Papanicolaou (Pap) test, was recently recognised as a cervical cancer screening option in the United States by the Society of Gynecologic Oncology and the American Society for Colposcopy and Cervical Pathology. The Food and Drug Administration has also approved the HPV test for primary screening.

A survey regarding perceived effectiveness of HPV testing was done among the US providers in 2009 and 2012 (Cooper et al., 2015). Both surveys showed that the majority (75.3%–86.1% and 79.5%–91.8%) agreed that the HPV test administered alone is an effective screening modality. However implementation of guidelines for screening with the HPV test may be influenced by many other factors including reimbursement and patient preferences.

A study about the feasibility and acceptability of self-sampling and HPV testing using Cepheid Xpert® HPV in a busy primary care facility in Malaysia found that in 2015, the uptake among eligible women was unsatisfactory, varying between states from only 17% to 35% (Woo, 2019). Barriers to uptake of Pap screening include both patient and healthcare system factors. Patient factors include fear, embarrassment and shame, lack of perceived benefits, inconvenience (no time), negative experience, poor awareness. While healthcare factors include lack of space and privacy in primary care facilities, inadequate human resources, limited screening infrastructure, and so on.

According to Woo (2019), excellent feedback was received from pilot participants of ROSE 1.0 (Removing Obstacles to Cervical Screening) pilot project, a new cervical screening approach, based on self-sampling using Copan FLOQswabs™ (Copan, Brescia, Italy) in community clinics and the Cepheid Xpert® HPV assay system, with testing performed on

site. In the pilot study, 99% of women said they would be willing to do the self sampling HPV test again, 95% would recommend it to family/friends and 94% preferred it to Pap smear screening. Reasons include it was simple (96%), quick (87%), self-performed (89%), enabled fast results (82%), enabled receipt of results by phone (76%), and offered follow up/treatment (62%). This method could potentially improve the public's perception towards HPV testing.

2.2. Sociodemographic factors

2.2.1. Age

In an international survey done in the USA, the UK, and Australia, it was found that participants in the USA who were younger had higher awareness of HPV testing than those unaware: mean age was 43 years and 48 years respectively (Dodd et al., 2014). No significant association between knowledge and perception of HPV testing and age was found in the survey.

In a survey done among the US providers , the mean age significantly increased from 2009 to 2012 among the internists (45.8 to 48.5) and obstetrician – gynecologists (47.0 to 49.0) (Cooper et al.,2015). However, the agreement about test effectiveness remained the same from 2009 to 2012, where it was highest among obstetricians – gynecologists and lowest among internists for co-testing (2009: $p = 0.002$, 2012: $p = 0.019$) and HPV testing (2009: $p = 0.003$, 2012: $p = 0.001$). Based on this data, it can be deduced that there is no significant association between age and perception of HPV testing.

2.2.2. Gender

The same survey found that knowledge and awareness of HPV testing were shown to be significantly associated with gender (Dodd et al., 2014). Women had significantly higher knowledge scores on HPV testing than men. The survey showed that women scored higher than men in the USA and Australia, but there was no gender difference in the UK.

In Australia, there was a significant relationship between awareness of HPV testing and gender, with a higher proportion of respondents aware of HPV testing being men (42%) compared with those not aware of HPV testing (32%). Among those who are aware: 42% are men, the rest are women. While among those who are not aware: 32% are men, the rest are women. (Dodd et al., 2014)

In subgroup analyses among men and women, some gender differences in the predictors of HPV testing awareness emerged. Among US women, awareness of HPV testing was significantly lower in the least educated group and in the group that had a daughter in the vaccination age range. Among Australian women, having a daughter in the vaccination age range was a significant predictor of HPV testing awareness. Among Australian men, being from an ethnic minority group was a significant predictor of HPV testing awareness. There were no gender differences in demographic predictors of HPV testing awareness in the UK.

In another study done among the US providers , agreement that HPV test administered alone if effective rose significantly from 2009 to 2012 among family practitioners and nurse practitioners; as the 2012 sample included a significantly higher percentage of female family practitioners (25.1% to 33.3%), indicating an association between gender and the perception of HPV testing (Cooper et al., 2015).

2.2.3. Ethnicity

There is no reported study on the influence of different races in Malaysia. However, the international study done in the USA, the UK, and Australia found significant associations between ethnicity and awareness of HPV testing (Dodd et al., 2014).

In the UK, there was a higher proportion of ethnic minority respondents in the group that was aware of HPV testing (23%) compared with the group that was unaware. Among Australian men, being from an ethnic minority group was a significant predictor of HPV testing awareness.

2.2.4. Level of education

Awareness of HPV testing was shown to have significant association with level of education. Based on the survey, in the USA, awareness of HPV testing was associated with higher educational levels: 44% of those aware of testing were in the high (college graduate or above) education group, compared with 34% of those who were unaware (Dodd et al., 2014). There was also a significant association between HPV testing awareness and education level in Australia, with 34% of those having heard of HPV testing being in the high (any university education) education group compared with 22% of those who were unaware.

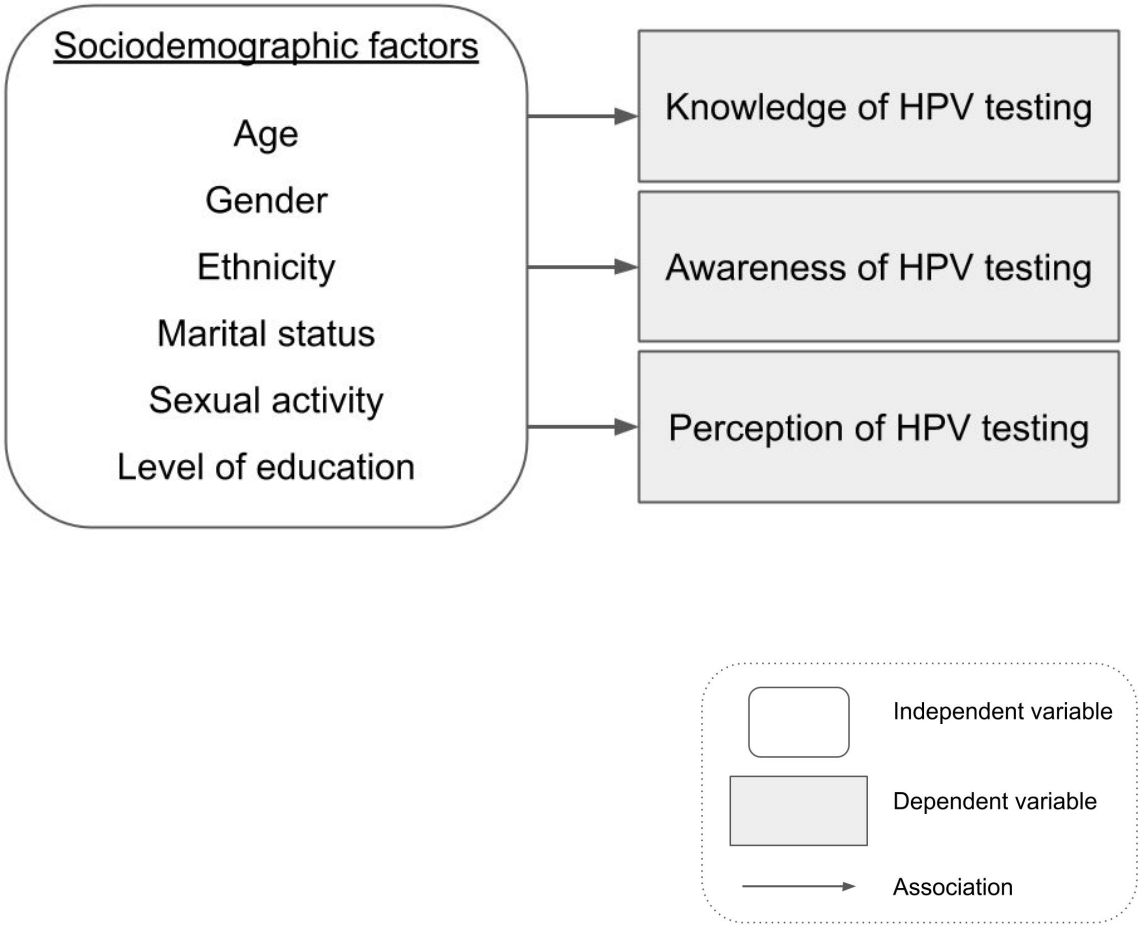
In the survey done among US providers , agreement that Pap testing and co-testing are effective screening strategies was consistently high (≥90%) in 2009 and 2012 across all provider groups surveyed (Cooper et al., 2015). The majority (70%) in each provider group in 2009 and 2012 also agreed that the HPV test alone is an effective screening modality, and agreement rose significantly during this time period among family practitioners and nurse practitioners. In 2009 and 2012, agreement about test effectiveness was highest among obstetricians–gynecologists and lowest among internists for co-testing and HPV testing. This

indicates that there might be a significant difference in perception of HPV testing among sample groups of different education levels.

2.2.5. Relationship status

Relationship status had a significant association with HPV testing knowledge in Australian women but not men. Analysis showed women who were cohabiting were more knowledgeable about HPV testing than married women (Dodd et al., 2014).

2.3. Conceptual framework



CHAPTER 3

METHODOLOGY

3.1. Study location

This study was conducted in Universiti Putra Malaysia (UPM) in Serdang, Selangor.

3.2. Study design

A cross sectional study design was used in this study.

3.3. Study duration

Data collection and analysis began on 30th August 2020 and ended by 13th September 2020.

3.4. Sampling

3.4.1. Sample population

The sample population of this study is all staff of Universiti Putra Malaysia (UPM), in the time frame of 30th August 2020 up to 13th September 2020.

3.4.2 Sampling frame

List of emails of all staff of Universiti Putra Malaysia (UPM) from the official website.

3.4.3. Selection criteria

3.4.3.1. Inclusion criteria

1. All male and female UPM staff who can understand Malay or English.
2. All staff from various faculties that work in UPM.
3. All staff including those on sabbatical and study leaves.

3.4.3.2. Exclusion criteria

1. UPM staff that are unwilling to give consent for research.

3.4.4. Sampling unit

Sampling unit for the study is staff of Universiti Putra Malaysia (UPM)

3.4.5. Sampling method

The sampling method chosen was convenience sampling. The questionnaire was made into a Google Form and was sent by email to UPM staff whose email addresses are readily available on the official website. Total of 2086 staff was contacted via email to invite them to participate in this study

3.4.6. Sample size

Awareness of HPV testing

Formula used:

a. To compare means,

$$n = \frac{2\sigma^2[z_{(1-\alpha/2)}+z_{(1-\beta)}]^2}{(\mu_1-\mu_2)^2}$$

Where:

σ = *Pooled of standard deviation* = $\sqrt{[(\sigma_1^2+\sigma_2^2)/2]}$

μ_1 = *Estimated mean 1 (based on previous study)*

μ_2 = *Estimated mean 2 (based on previous study)*

$z_{(1-\alpha/2)}$ = *Level of confidence (for a level of confidence of 95%, z = 1.96)*

$z_{(1-\beta)}$ = *Power of study (for a power of 80%, z = 0.84)*

b. To compare proportions,

$$n = \frac{\{[Z_{(1-\alpha/2)}\times\sqrt{2\overline{P}(1-\overline{P})}] + [z_{(1-\beta)}\times\sqrt{P_1(1-P_1)+P_2(1-P_2)}]\}^2}{(P_1-P_2)^2}$$

Where:

$\overline{P} = (P_1+P_2)/2$

P_1 = *Estimated proportion 1 (based on previous study)*

P_2 = *Estimated proportion 2 (based on previous study)*

$z_{(1-\alpha/2)}$ = *Level of confidence (for a level of confidence of 95%, z = 1.96)*

$z_{(1-\beta)}$ = *Power of study (for a power of 80%, z = 0.84)*

Variables		Sample size			Reference
		USA	UK	AUS	
Age (mean)		43	39	48	Dodd et al., 2014.
Gender	Male	8	52	222	
	Female	6	71	10	
Ethnicity	Majority	7	29	13	
	Minority	8	57	368	
Level of education	High	3	157	796	
	Medium	6	95	12	
	Low	2445	13	8	
Relationship status	Single	5	5	-	
	Dating	2	65	4	
	Cohabiting	7	38	8	
	Married	11	65	14	

Knowledge of HPV testing

Formula used:

To compare means,

$$n = \frac{2\sigma^2[z_{(1-\alpha/2)}+z_{(1-\beta)}]^2}{(\mu_1-\mu_2)^2}$$

Where:

σ = *Pooled of standard deviation* = $\sqrt{[(\sigma_1^2+\sigma_2^2)/2]}$

μ_1 = *Estimated mean 1 (based on previous study)*

μ_2 = *Estimated mean 2 (based on previous study)*

$z_{(1-\alpha/2)}$ = *Level of confidence (for a level of confidence of 95%, z = 1.96)*

$z_{(1-\beta)}$ = *Power of study (for a power of 80%, z = 0.84)*

Variables		Sample size			Reference
		USA	UK	AUS	
Gender	μ_1 = male μ_2 = female	93	75292	174	Dodd et al., 2014.
Level of education	μ_1 = high μ_2 = medium	1200	105	2038	
	μ_1 = high	101	10369	166	

	μ_2 = low				
	μ_1 = medium μ_2 = low	205	125	333	
Relationship status	μ_1 = single μ_2 = dating	411123	84811	30	
	μ_1 = single μ_2 = cohabiting	70	1757	42	
	μ_1 = single μ_2 = married	630	400	43713	
	μ_1 = dating μ_2 = cohabiting	84	5871	1427	
	μ_1 = dating μ_2 = married	798	450	28	
	μ_1 = cohabiting μ_2 = married	146	241	39	

Perception of HPV testing

Formula used:

To compare proportions,

$$n = \frac{\{[Z_{(1-\alpha/2)} \times \sqrt{2\overline{P}(1-\overline{P})}] + [z_{(1-\beta)} \times \sqrt{P_1(1-P_1)+P_2(1-P_2)}]\}^2}{(P_1-P_2)^2}$$

Where:

$\overline{P} = (P_1+P_2)/2$

P_1 = *Estimated proportion 1 (based on previous study)*

P_2 = *Estimated proportion 2 (based on previous study)*

$z_{(1-\alpha/2)}$ = *Level of confidence (for a level of confidence of 95%, z = 1.96)*

$z_{(1-\beta)}$ = *Power of study (for a power of 80%, z = 0.84)*

Variables	Sample size				Reference
	Internists	Family practitioners	Nurse practitioners	Obstetrician - gynecologists	
Pap test alone	4	3	3	3	Cooper & Saraiya, 2015.
Co-testing	5	4	4	3	
HPV test alone	11	7	6	5	

Sample size selected:

Formula: $n = \frac{2\sigma^2[z_{(1-\alpha/2)}+z_{(1-\beta)}]^2}{(\mu_1-\mu_2)^2}$

Where:

$\sigma = \sqrt{[(1.59^2 + 1.53^2)/2]}$

$= 1.56$

$\mu_1 = 2.77$

$\mu_2 = 2.29$

$z_{(1-\alpha/2)} = 1.96$

$z_{(1-\beta)} = 0.84$

$n = \frac{2(1.56)^2[1.96+0.84]^2}{(2.77-2.29)^2}$

$n = 166$

166 was chosen as the most ideal sample size for this research. It was due to limitations of limited duration of data collection.

3.5. Variables

3.5.1. Dependent variable

The dependent variables are:

- Knowledge of HPV testing among UPM staff.
- Awareness of HPV testing among UPM staff.
- Perception of HPV testing among UPM staff

3.5.2. Independent variable

The independent variables are the sociodemographic factors :

- Age of UPM staff.
- Gender of UPM staff.
- Ethnicity of UPM staff.
- Marital status of UPM staff.
- Sexual activity of UPM staff.
- Level of education of UPM staff.

3.6. Data collection

3.6.1. Study instrument

The study instrument used is a questionnaire in Google Form.The Google Form consists of 4 sections (Section A, B, C, and D). Section A consists of questions regarding the sociodemographic characteristics (age, gender, ethnicity, marital status, sexual activity, level of education) of the respondents. Section B, C, and D consist of questions that were designed

to assess the awareness, knowledge, and perception of respondents about HPV testing respectively. In section B, awareness is determined by whether the respondent has heard about the HPV test before. Section C includes 8 questions to determine the respondent's level of knowledge on HPV testing, the knowledge will be graded in the scale of 1 to 8. In section D, respondent's opinion on the effective population-based cervical cancer screening out of 3 options will be obtained.

3.6.2. Validity and reliability

The items in the questionnaire were adapted from previous studies by Dodd et al. (2014). As for Section B and C, the questionnaires was validated by Waller et al. (2012). The questionnaire in Section D was adapted based on validated studies by Crystale et al. (2016). Permission for all items have been obtained from the developers.

3.6.3. Data collection technique

Data was collected by distributing Google Forms via email to the targeted respondents. The respondents are required to answer all questions in the questionnaire. Upon submission of the response, the data was collected and analysed.

3.7. Operational definition

- Sociodemographic factors
    - Age - year 2020 minus the year of birth of subject
    - Gender - as stated in birth certificate
    - Ethnicity - as stated in birth certificate
    - Marital status - in terms of whether she or he forms a couple relationship with another person, either registered marriage or de facto marriage
    - Sexual activity - whether she or he has experienced sexual intercourse before
    - Level of education - level of the highest completed qualification reported in any field of study

3.8. Data analysis

The collected data was analysed using the IBM Statistical Package for Social Science (SPSS) version 26.0. Normality, median and interquartile range of the data was calculated. The tests carried out were the Pearson's Chi-Square test, Fisher's Exact test, Mann-Whitney U test, and Kruskal-Wallis test. The significance level was set at $P<0.05$.

The Pearson's Chi-Square test was used to test for associations between sociodemographic factors and awareness; and associations between sociodemographic factors and perception of HPV testing respectively. Fisher's Exact test was used when the Pearson's Chi-Square test is not appropriate (more than 20% of cells have expected counts less than 5).

Mann-Whitney U test was used to test for associations between independent variables with 2 groups (gender, sexual activity) and knowledge of HPV testing; whereas

Kruskal-Wallis test was used to test for associations between independent variables with more than 2 groups (age, ethnicity, marital status, education level) and knowledge of HPV testing.

3.9. Study ethics

The ethical approval was obtained from the Ethics Committee For Research Involving Human Subject of Universiti Putra Malaysia (JKEUPM) with reference number of JKEUPM-2020-242.

CHAPTER 4

RESULTS

4.1. Response rate

Google-form-based questionnaires were distributed to 2086 staff of Universiti Putra Malaysia via emails obtained from the official websites. A total of 166 responses were received. The response rate was 7.96%. All responses were complete and met all the inclusion criterias and none of the exclusion criteria, thus all data were reviewed and recorded.

4.2. Normality test and other statistical test

The IBM Statistical Package for the Social Science (SPSS) version 26.0 was used for the data entry, normality testing, and data analysis. For descriptive statistics, categorical data (age, gender, ethnicity, marital status, sexual activity, level of education, awareness, perception) were analyzed into frequency and percentage, while the numerical data (knowledge score) was analyzed using median and interquartile range as the knowledge score was not normally distributed, with p-values less than 0.05 for both Kolmogorov-Smirnov Test and Shapiro-Wilk Test. For analytical statistics, the associations between knowledge, awareness, and perception of HPV testing among UPM staff were analyzed using Pearson Chi-Square test, Fisher's Exact test, Mann-Whitney U test, and Kruskal-Wallis test.

The Pearson's Chi-Square test was used to test for associations between sociodemographic factors and awareness; and associations between sociodemographic factors

and perception of HPV testing respectively. Fisher's Exact test was used when the Pearson's Chi-Square test is not appropriate (more than 20% of cells have expected counts less than 5).

Mann-Whitney U test was used to test for associations between independent variables with 2 groups (gender, sexual activity) and knowledge of HPV testing; whereas Kruskal-Wallis test was used to test for associations between independent variables with more than 2 groups (age, ethnicity, marital status, education level) and knowledge of HPV testing.

4.3. Sociodemographic characteristics of respondents

Table 4.3.1 shows the distribution of sociodemographic characteristics of respondents. The majority of the respondents were aged between 30 to 39 year old (43.4%), female (68.7%), Malay (77.7%), married (81.9%), sexually active (83.1%), and level of education at Master / PhD (77.7%).

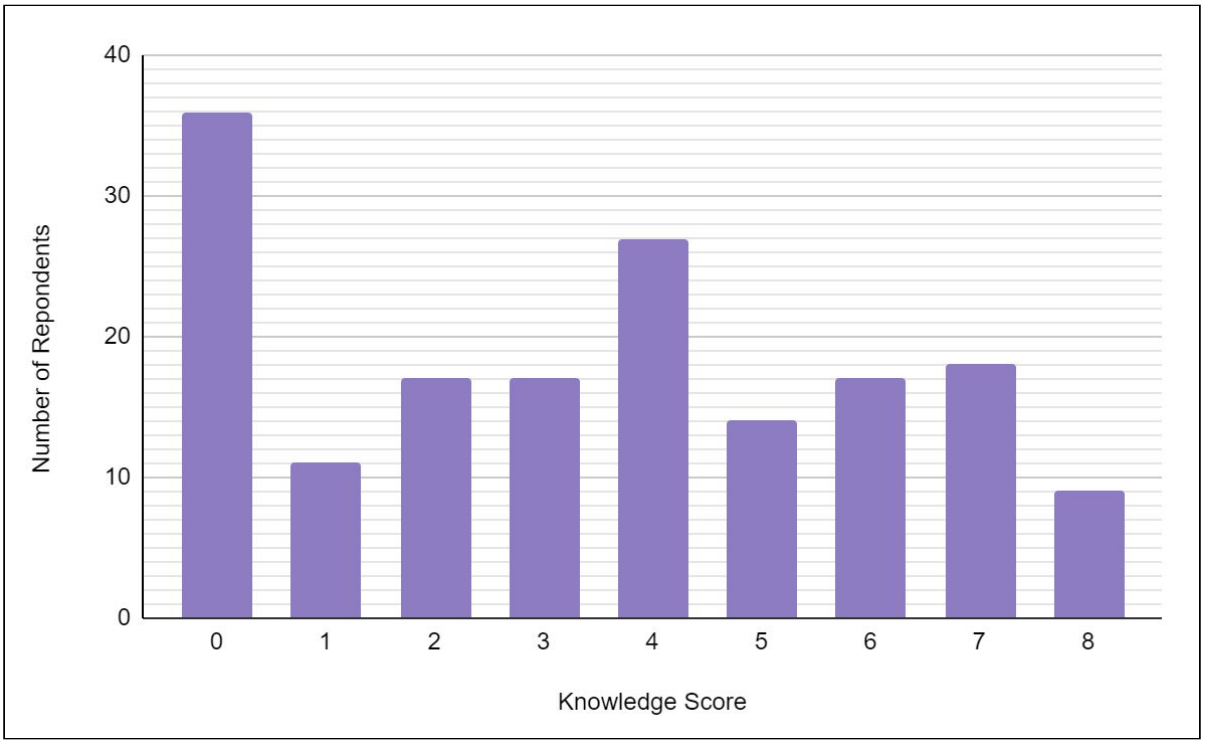
Table 4.3.1 Sociodemographic characteristics of respondents

Case characteristics	Frequency, n	Percentage (%)
Age		
Below 20	0	0
20-29	8	4.8
30-39	72	43.4
40-49	60	36.1
50-59	22	13.3
60 and above	4	2.4
Gender		
Male	52	31.3
Female	114	68.7
Ethnicity		
Malay	129	77.7
Chinese	19	11.4
Indian	5	3.0
Other	13	7.8
Marital Status		
Single	28	16.9
Married	136	81.9
Divorced	2	1.2
Sexual Activity		
Yes	138	83.1
No	28	16.9
Level of Education		
Primary	0	0
Secondary	5	3.0
Diploma	12	7.2
Degree	20	12.0
Master / PhD	129	77.7

4.4. Knowledge of HPV testing and sociodemographic factors

Knowledge score of the respondents was graded on a scale of 0 to 8. The knowledge score was not normally distributed, with p-values less than 0.05 for both Kolmogorov-Smirnov Test and Shapiro-Wilk Test. Median score was 5 and the interquartile range was 5. Figure 4.4 shows the number of respondents of knowledge scores. Highest number (36) of respondents scored 0 points while least number (9) of respondents scored 8 points.

Figure 4.4 Number of Respondents Against Knowledge Scores



4.4.1. Age

Table 4.4.1 shows the results of Kruskal-Wallis test. The p-value is more than 0.05, hence there is no significant association between age and knowledge of HPV testing.

Table 4.4.1 Association between Age and Knowledge of HPV testing

	Knowledge score of HPV testing
Kruskal-Wallis H	1.359
df	4
p-value	0.851

4.4.2. Gender

Table 4.4.2 shows the results of Mann-Whitney U test. The p-value is less than 0.05, hence there is significant association between gender and knowledge of HPV testing. Females have higher knowledge regarding HPV testing compared to male.

Table 4.4.2 Association between Gender and Knowledge of HPV testing

	Knowledge score of HPV testing
Mann-Whitney U	1705.000
Z	-4.428
p-value	0.000

4.4.3. Ethnicity

Table 4.4.3 shows the results of Kruskal-Wallis test. The p-value is less than 0.05, hence there is significant association between ethnicity and knowledge of HPV testing. Chinese have better knowledge regarding HPV testing followed by Indian, Malay and others.

Table 4.4.3 Association between Ethnicity and Knowledge of HPV testing

	Knowledge score of HPV testing
Kruskal-Wallis H	11.674
df	3
p-value	0.009

4.4.4. Marital status

Table 4.4.4 shows the results of Kruskal-Wallis test. The p-value is more than 0.05, hence there is no significant association between marital status and knowledge of HPV testing.

Table 4.4.4 Association between Marital status and Knowledge of HPV testing

	Knowledge score of HPV testing
Kruskal-Wallis H	0.758
df	2
p-value	0.695

4.4.5. Sexual activity

Table 4.4.5 shows the results of Mann-Whitney U test. The p-value is more than 0.05, hence there is no significant association between sexual activity and knowledge of HPV testing.

Table 4.4.5 Association between Sexual activity and Knowledge of HPV testing

	Knowledge score of HPV testing
Mann-Whitney U	1653.500
Z	-1.213
p-value	0.225

4.4.6. Level of education

Table 4.4.6 shows the results of Kruskal-Wallis test. The p-value is more than 0.05, hence there is no significant association between level of education and knowledge of HPV testing.

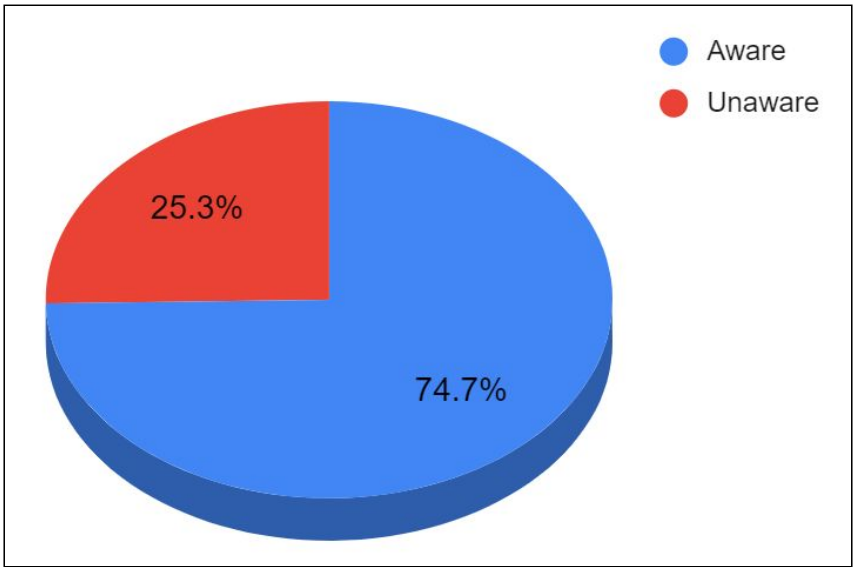
Table 4.4.6 Association between Level of education and Knowledge of HPV testing

	Knowledge score of HPV testing
Kruskal-Wallis H	6.614
df	3
p-value	0.085

4.5. Awareness of HPV testing and sociodemographic factors

Figure 4.5 shows the awareness of HPV testing among the respondents. Majority (74.7%) of the respondents have heard of the HPV test before.

Figure 4.5 Awareness of HPV Testing



4.5.1. Age

Table 4.5.1 shows the results of the Pearson's Chi-Square tests and Fisher's Exact test. The p-value is more than 0.05, hence there is no significant association between age and awareness of HPV testing.

Table 4.5.1 Association between Age and Awareness of HPV testing

Age	Frequency, n		x2	df	p-value	Fisher's Exact value	p-value
	Aware	Unaware					
20 - 29	5	3	4.567	4	0.335	4.852	0.279
30 - 39	56	16					
40 - 49	42	18					
50 - 59	19	3					
60 and above	2	2					

4.5.2. Gender

Table 4.5.2 shows the results of the Pearson's Chi-Square tests. The p-value is less than 0.05, hence there is significant association between gender and awareness of HPV testing. Females have higher awareness regarding HPV testing compared to males.

Table 4.5.2 Association between Gender and Awareness of HPV testing

Gender	Frequency, n		x2	df	p-value
	Aware	Unaware			
Male	26	26	24.440	1	0.000
Female	98	16			

4.5.3. Ethnicity

Table 4.5.3 shows the results of the Pearson's Chi-Square test and Fisher's Exact test. The p-value is more than 0.05, hence there is no significant association between ethnicity and awareness of HPV testing.

Table 4.5.3 Association between Ethnicity and Awareness of HPV testing

Ethnicity	Frequency, n		x2	df	p-value	Fisher's Exact value	p-value
	Aware	Unaware					
Malay	95	34	6.955	3	0.073	6.198	0.089
Chinese	17	2					
Indian	5	0					
Other	7	6					

4.5.4. Marital status

Table 4.5.4 shows the results of the Pearson's Chi-Square tests and Fisher's Exact test. The p-value is more than 0.05, hence there is no significant association between marital status and awareness of HPV testing.

Table 4.5.4 Association between Marital Status and Awareness of HPV testing

Marital status	Frequency, n		x2	df	p-value	Fisher's Exact value	p-value
	Aware	Unaware					
Single	21	7	0.692	2	0.707	0.347	1.000
Married	101	35					
Divorced	2	0					

4.5.5. Sexual activity

Table 4.5.5 shows the results of the Pearson's Chi-Square tests. The p-value is more than 0.05, hence there is no significant association between sexual activity and awareness of HPV testing.

Table 4.5.5 Association between Sexual Activity and Awareness of HPV testing

Sexual activity	Frequency, n		x2	df	p-value
	Aware	Unaware			
Yes	104	34	0.191	1	0.662
No	20	8			

4.5.6. Level of education

Table 4.4.6 shows the results of the Pearson's Chi-Square tests and Fisher's Exact test. The p-value is more than 0.05, hence there is no significant association between level of education and awareness of HPV testing.

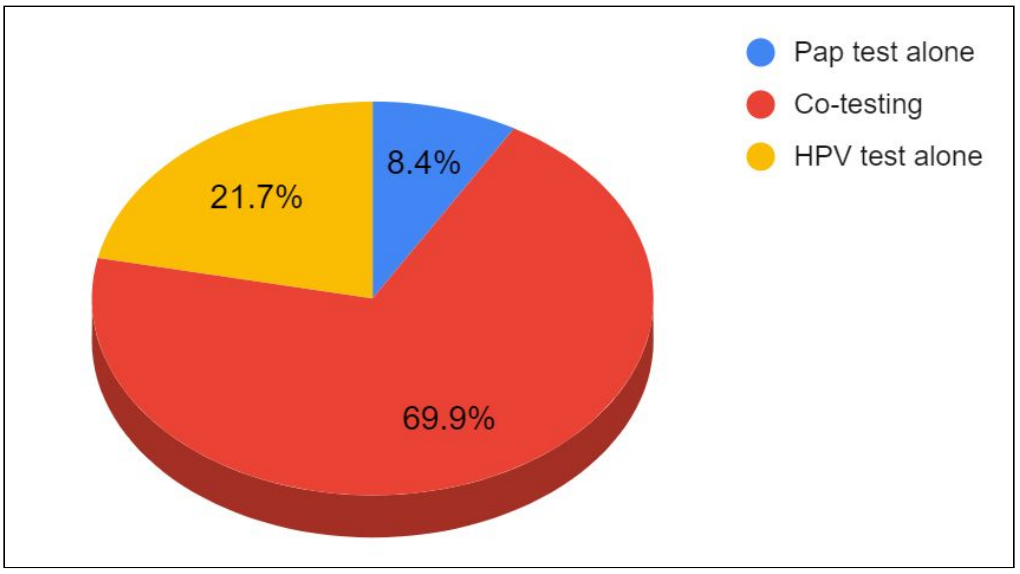
Table 4.5.6 Association between Level of Education and Awareness of HPV testing

Level of education	Frequency, n		x2	df	p-value	Fisher's Exact value	p-value
	Aware	Unaware					
Secondary	3	2	2.397	3	0.494	2.346	0.491
Diploma	10	2					
Degree	17	3					
Master / PhD	94	35					

4.6. Perception of HPV testing and sociodemographic factors

Figure 4.6 shows the perception of HPV testing among the respondents. Most of the respondents chose co-testing (69.9%) as the effective choice for population-based cervical cancer screening, followed by HPV test alone (21.7%), and Pap test alone (8.4%).

Figure 4.6 Perception of HPV Testing



4.6.1. Age

Table 4.6.1 shows the results of the Pearson's Chi-Square tests and Fisher's Exact test. The p-value is more than 0.05, hence there is no significant association between age and perception of HPV testing.

Table 4.6.1 Association between Age and Perception of HPV testing

Age	Frequency, n			x2	df	p-value	Fisher's Exact value	p-value
	Pap test alone	Co-testing	HPV test alone					
20 - 29	1	3	4	10.705	8	0.219	11.181	0.133
30 - 39	6	56	9					
40 - 49	4	42	14					
50 - 59	3	13	6					
60 and above	0	2	2					

4.6.2. Gender

Table 4.6.2 shows the results of the Pearson's Chi-Square tests. The p-value is more than 0.05, hence there is no significant association between gender and perception of HPV testing.

Table 4.6.2 Association between Gender and Perception of HPV testing

Gender	Frequency, n			x2	df	p-value
	Pap test alone	Co-testing	HPV test alone			
Male	3	32	17	5.620	2	0.060
Female	11	84	19			

4.6.3. Ethnicity

Table 4.6.3 shows the results of the Pearson's Chi-Square tests and Fisher's Exact test. The p-value is more than 0.05, hence there is no significant association between ethnicity and perception of HPV testing.

Table 4.6.3 Association between Ethnicity and Perception of HPV testing

Ethnicity	Frequency, n			x2	df	p-value	Fisher's Exact value	p-value
	Pap test alone	Co-testing	HPV test alone					
Malay	9	92	28	6.154	6	0.406	5.873	0.622
Chinese	2	14	3					
Indian	0	4	1					
Other	3	6	4					

4.6.4. Marital status

Table 4.6.4 shows the results of the Pearson's Chi-Square tests and Fisher's Exact test. The p-value is more than 0.05, hence there is no significant association between marital status and perception of HPV testing.

Table 4.6.4 Association between Marital status and Perception of HPV testing

Marital status	Frequency, n			x2	df	p-value	Fisher's Exact value	p-value
	Pap test alone	Co-testing	HPV test alone					
Single	2	20	6	1.120	4	0.891	1.774	0.800
Married	12	95	29					
Divorced	0	1	1					

4.6.5. Sexual activity

Table 4.6.5 shows the results of the Pearson's Chi-Square tests. The p-value is more than 0.05, hence there is no significant association between sexual activity and perception of HPV testing.

Table 4.6.5 Association between Sexual activity and Perception of HPV testing

Sexual activity	Frequency, n			x2	df	p-value
	Pap test alone	Co-testing	HPV test alone			
Yes	11	98	29	0.529	2	0.768
No	3	18	7			

4.6.6. Level of education

Table 4.6.6 shows the results of the Pearson's Chi-Square tests and Fisher's Exact test. The p-value is more than 0.05, hence there is no significant association between level of education and perception of HPV testing.

Table 4.6.6 Association between Level of education and Perception of HPV testing

Level of education	Frequency, n			x2	df	p-value	Fisher's Exact value	p-value
	Pap test alone	Co-testing	HPV test alone					
Secondary	0	4	1	0.666	6	0.995	0.871	0.996
Diploma	1	8	3					
Degree	2	14	4					
Master / PhD	11	90	28					

CHAPTER 5

DISCUSSION

5.1. Sociodemographic Factors

A total of 166 respondents participate in this study as shown in Table 4.3.1. Majority of respondents were aged from 30 to 39 years old (43.4%). This could be due to the commonest age among UPM staff were between 30-45 years old. More than half of the respondents were female (68.7%) because most of the UPM staff are female and they pay strong interest toward this study as they are primarily at risk of HPV related cervical cancer. The majority of the respondents are Malay (77.7%) and sexually active (83.1%). The highest educational level for the respondents were at Master or PhD level (77.7%). This is due to our study population which is based in an educational institute.

5.2. Factors associated with knowledge of HPV testing among UPM staff

Both median score and interquartile range were 5 and the analysis revealed that the majority of the respondents had poor knowledge regarding HPV testing. The number of respondents that scored 0 was the highest while the respondents that scored 8 were the least. This is correlated with a previous study that reported there was poor knowledge of HPV in Malaysia which can also affect the knowledge about HPV testing among respondents. Lack of knowledge can result in underutilization of preventive strategies for cervical cancer.

Age showed no significant association with knowledge of HPV testing. This finding is similar to study done by Dodd et.al. This could be due to advancement in technology where information can be obtained on the internet by anyone of any age.

Gender was significantly associated with knowledge of HPV testing as female respondents showed greater knowledge on HPV testing compared to male respondents. A similar finding was reported in studies regarding HPV testing in the USA, UK and Australia (Dodd et al., 2014). As cervical cancer is the third most common cancer among women, it is unsurprising that women are more knowledgeable than men. Women who had previous Pap smear may gain knowledge about HPV testing as these two tests are related.

There was a significant association between ethnicity and knowledge of HPV testing where Chinese showed the highest knowledge towards HPV testing followed by Indian, Malay and others. A previous study by Ali, A.N. et al. (2011) had stated that Chinese groups had more knowledge about HPV since Chinese women have the highest rate of cervical cancer incidence in Malaysia. Positive attitude towards sex before marriage was reported to be seen between Chinese men and women as hook-ups and casual sexual encounters are increasingly common among them.

Marital status had no significant association with knowledge of HPV testing. The result was opposite from the previous study since the previous study showed that relationship status had a significant association with HPV testing in Australian women and the women who were cohabiting were more knowledgeable than married women. Sexual activity showed no association with knowledge of HPV testing. This can happen as some of the respondents didn't have any idea about the local screening initiatives with prevalence barriers of lack of information on how to obtain screening services even though they were sexually active.

This study also found that there was no significant association between the level of education and knowledge of HPV testing. This differs from previous study by Dodd et al., which showed significant association with HPV testing knowledge in the USA. As this study is performed in an educational institution, educational level may not differ much in terms of knowledge of the participants as the participants may have been exposed to cervical cancer programmes within the institution.

5.3. Factors associated with awareness of HPV testing among UPM staff

Our study found that the majority of the respondents (74.7%) have heard of HPV testing before and are aware of its existence.

In this study, there is no significant association between age and awareness of HPV testing. In the previous study by Dodd et al., a similar finding was found for the respondents in the UK and Australia. Nevertheless, the respondents in the USA who were younger have higher awareness compared to those in the older age range. This is probably due to the sexual education programme available at school which educates their school children on cervical screening and its relationship to HPV (Kuan, T.T.C. et al., 2011).

As for the gender, this study has found that there is significant association between gender and awareness of HPV testing. Females have higher awareness regarding HPV testing compared to males. This is parallel to the result of a study done previously (Dodd et al., 2014). The survey shows that women scored higher than men in the USA and Australia, but there was no gender difference in the UK. This is due to the fact that most HPV infections incidence occurs more commonly in females rather than men, thus making the women more aware compared to men.

There is no significant association between ethnicity and awareness of HPV testing. However, the international study done in the USA, the UK, and Australia found significant associations between ethnicity and awareness of HPV testing (Dodd et al., 2014). In the UK, there was a higher proportion of ethnic minority respondents in the group that was aware of HPV testing (23%) compared with the group that was unaware. There was no previous study on the influence of the myriad and diverse races in Malaysia towards the awareness of HPV testing.

This study found no significant association between level of education and awareness of HPV testing. However, in the USA, awareness of HPV testing was associated with higher educational levels. 44% of those aware of testing were in the high (college graduate or above) education group, compared with 34% of those who were unaware (Dodd et al., 2014). There was also a significant association between HPV testing awareness and education level in Australia, with 34% of those having heard of HPV testing being in the high (any university education) education group compared with 22% of those who were unaware.

There seems to be no significant association between marital status and awareness of HPV testing. There is also no significant association between sexual activity and awareness of HPV testing. In the previous study, relationship status had a significant association with HPV testing knowledge in Australian women but not men. Analysis showed women who were cohabiting were more knowledgeable about HPV testing than married women (Dodd et al., 2014).

5.4. Factors associated with perception of HPV testing among UPM staff

Majority of the respondents chose co-testing (69.9%) as the effective choice for population-based cervical cancer screening, followed by HPV test alone (21.7%), and Pap test alone (8.4%). This differs from the finding in study by Cooper et al., where the majority of participants (75.3%–86.1% and 79.5%–91.8%) choose the HPV test administered alone as an effective screening modality. However implementation of guidelines for screening with the HPV test may be influenced by many other factors including reimbursement and patient preferences. Age showed no significant association towards perception of HPV testing.

There is no significant association between gender and perception of HPV testing. However, in a study done previously by Cooper et al. (2015) it is in agreement that HPV test administered alone if effective rose significantly from 2009 to 2012 among family practitioners and nurse practitioners; as the 2012 sample included a significantly higher percentage of female family practitioners (25.1% to 33.3%), indicating an association between gender and the perception of HPV testing.

As for ethnicity, it shows no significant association towards perception of HPV testing. There is no significant association between level of education and perception towards HPV testing. However, in the survey done among US providers , agreement that Pap testing and co-testing are effective screening strategies was consistently high (≥90%) in 2009 and 2012 across all provider groups surveyed (Cooper et al., 2015). The majority (70%) in each provider group in 2009 and 2012 also agreed that the HPV test alone is an effective screening modality, and agreement rose significantly during this time period among family practitioners and nurse practitioners. In 2009 and 2012, agreement about test effectiveness was highest among obstetricians–gynecologists and lowest among internists for co-testing and HPV

testing. This indicates that there might be a significant difference in perception of HPV testing among sample groups of different education levels. As for the marital status, it shows no significant association towards HPV testing whether the respondent is single, divorced, or married. There is also no significant association towards HPV testing for sexual activity whether the respondent is sexually active or not.

5.5. Limitations

There were few limitations faced while conducting this research. The first limitation is there are limited studies in this topic. Only a few overseas studies and one local study was directly related to the HPV test. This made the literature review insufficient and a new research typology had to be developed.

Secondly, time constraint for data collection was limited due to late ethical approval. As a result, the sample size obtained may not represent the population that we studied. This led to the third limitation which is smaller sample size in order to comply with the due date. Since this study is a cross sectional study, the sample size might not have the capability to portray the entire population.

The fourth limitation was non response bias. As this study was conducted online and the questionnaire was distributed via email, there is a high possibility that the recipients missed the notification or the email was recognised as spam. There is also a chance of misunderstanding of questions among participants as the researchers are unable to explain to them face to face.

Lastly, there is a limitation in the measure used for data collection. In the last part of the questionnaire, there was respondents asked “Which option(s) is/are effective for

population-based cervical cancer screening?" to assess their perception towards HPV testing. The 3 options given were "Papanicolaou (Pap) test alone", "Co-testing (Pap test in conjunction with HPV test)", and "HPV test alone".Respondents had the possibility to blindly select either one of these 3 options if they were clueless. This might cause the data collected to be inaccurate.

CHAPTER 6

CONCLUSION

6.1. Recommendations

The results obtained were affected by several limitations, and there are some possible ways to overcome these limitations in future work.

Longer duration for data collection and data analysis will allow a larger sample size, for an ideal portrayal of the whole sample population.

Besides, a reward or token of appreciation for the participants might be helpful in improving the response rate. Random sampling is the preferred method of sampling instead of convenience sampling to ensure an unbiased representation of the total sample population.

Other than that, an option "not sure" can be added for questions on perception to prevent respondents who are clueless from blindly choosing an answer just to complete the questionnaire. This might provide more accurate data and results.

6.2. Strengths of study

This study has been one of the first few studies on this particular topic of HPV test in Malaysia. This study also gives awareness to the participants on both HPV and HPV testing. As curiosity and interest on the topic were piqued when the targeted respondents received the email invitation to participate in this study, recipients might find out more on the topic after answering the questionnaire. Furthermore, this study provides baseline information of the

awareness, knowledge, and perception of HPV testing among UPM staff and the associated factors. This would be of great help for health educators and future researchers, in planning programmes for the community.

6.3. Clinical Implication

This study shows that knowledge in HPV test was generally unsatisfactory among UPM staff. Health workers shall pay more attention in spreading awareness and educating the public about HPV testing and its importance. It is shown that awareness and knowledge are significantly associated with gender and ethnicity. Awareness is poor among males whereas knowledge is relatively poor among the Malays and other minor races. Improving the levels of awareness and knowledge might be the key to reducing prevalence of HPV-related morbidity and mortality in Malaysia.

6.4. Conclusion

Based on the results, it can be observed that there is an association between knowledge of HPV testing with gender and ethnicity, and between awareness of HPV testing and gender.

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APPENDICES

Appendix 1: Work Plan

Gantt chart

MONTH / ACTIVITY	June	July	August	September	October
Proposal preparation					
Submission of proposal					
Proposal presentation					
Submission of proposal for ethical approval					
Data collection and analysis					
Data analysis presentation					
Writing of final report					
Preparation of poster					
Submission of scientific article and poster					
Poster Competition					
Submission of final report					
Final report presentation					
Submission of log book and hard bound copies of final report					

Appendix 2: Information sheet and Informed Consent Form

English version:

JAWATANKUASA ETIKA UNIVERSITI UNTUK PENYELIDIKAN MELIBATKAN MANUSIA (JKEUPM)
UNIVERSITI PUTRA MALAYSIA, 43400 UPM SERDANG, SELANGOR, MALAYSIA

FORM 2.4: RESPONDENT'S INFORMATION SHEET AND INFORMED CONSENT FORM

Please read the following information carefully and do not hesitate to discuss any questions you may have with the researcher.

1. STUDY TITLE

Knowledge, awareness, and perception of HPV testing among UPM staff.

2. INTRODUCTION:

This study is an undergraduate research project that will be conducted from June till October 2020 among UPM staff. The number of respondents in this study is approximately 241. This research project is conducted by three medical students of Universiti Putra Malaysia, supervised by two medical lecturers.

HPV is the most common viral infection that can cause abnormal cell changes and lead to cervical cancer. One of the preventive measures that can be taken to avoid this is by doing screening tests such as Pap Smear and HPV testing. However, most people are still unfamiliar with HPV testing as compared to pap smear. By increasing knowledge and awareness about HPV testing, it can be the key to reduce morbidity and morbidity of cervical cancer which is one of the common cancers in Malaysia. Therefore, the purpose of this study is to determine the knowledge, awareness and perception of HPV testing among UPM staff.

Please initial here if you have read and understood the contents of this page _____

3. WHAT WILL YOU HAVE TO DO?

This questionnaire consists of section A to D. Section A is about personal details and sociodemographics; section B is about awareness of HPV testing; section C is about knowledge of HPV testing; and section D is about perception of HPV testing. You are required to answer all questions.

4. WHO SHOULD NOT PARTICIPATE IN THE STUDY?

Respondents who do not fulfil the criterias below shall be excluded from the study:

- Currently working at Universiti Putra Malaysia (UPM).
- Understand English and Malay
- Willing to give consent for this research.

5. WHAT WILL BE THE BENEFITS OF THE STUDY:

(a) **TO YOU AS THE SUBJECT?**

Respondents can contribute to better understanding of UPM staff's knowledge, awareness, and perception of HPV testing. Your participation is voluntary and you may withdraw anytime without penalty or loss of benefit. There are no anticipated expenses that will be charged if you participate in this study.

(b) **TO THE INVESTIGATOR?**

Data collected from this research enables the researchers to study the sociodemographic factors associated with the knowledge, awareness, and perception of HPV testing among UPM staff. The investigators will only serve as investigators and will not be involved as the participants' health care provider.

Please initial here if you have read and understood the contents of this page _____

6. WHAT ARE THE POSSIBLE RISKS?

There is no possible risk towards the respondents answering the questionnaire as the study is conducted through an online questionnaire without involving face-to-face interactions with the respondents. Therefore, there will be no plans of compensation or insurance to the participants in this study.

7. WILL THE INFORMATION THAT YOU PROVIDE AND YOUR IDENTITY REMAIN CONFIDENTIAL?

All the information that you have provided will be protected and remain private and confidential. Your identity will also remain confidential when this research is published. Study monitor(s), auditor(s), and JKEUPM Ethics Review Panel and regulatory authorities will be granted direct access to your information ONLY for verification of clinical trial procedures and data. All the information that has been provided by the participants will be kept in an encrypted laptop for a minimum of 3 years and then it will be destroyed permanently. This study had been approved by the JKEUPM Ethics Review Panel. Any information regarding rights of study participants, including grievances and complaints, you may contact them at 03-9769 1002.

Please initial here if you have read and understood the contents of this page _____

8. WHO SHOULD YOU CONTACT IF YOU HAVE ADDITIONAL QUESTIONS DURING THE COURSE OF THE RESEARCH?

- Nor Fadlina binti Mazlan

  Email: fadlina.3511699@gmail.com

  H/P no.: 017-3253203

- Amanda Chin Yun-Vern

  Email: amandayay99@gmail.com

  H/P no.: 010-2293209

- Muhammad Haziq bin Mohd Nizaruddin

  Email: ickagitochisan1@gmail.com

  H/P no.: 018-3164815

Please initial here if you have read and understood the contents of this page _____

9. CONSENT

I ……..……. Identity Card No. ……..…… address…….…….. ……...… hereby voluntarily agree to take part in the research stated above *(clinical / drug trial / video recording / focus group / interview-based / questionnaire-based).

I have been informed about the nature of the research in terms of methodology, possible adverse effects and complications (as written in the Respondent's Information Sheet). I understand that I have the right to withdraw from this research at any time without giving any reason whatsoever. I also understand that this study is confidential and all information provided with regard to my identity will remain private and confidential.

I *(wish / do not wish) to know the results related to my participation in the research

I *(agree / do not agree) that the images / photos / video recordings / voice recordings related to me be used in any form of publication or presentation (if applicable)

* delete where necessary

Signature: ……..…… (Respondent)

Signature ……..……. (Witness)

Date: ……..

Name :……..…..

I/C No. :……..….

I confirm that I have explained to the respondent the nature and purpose of the above-mentioned research.

Date ……..……

Signature ……..……. (Researcher)

Malay version:

JAWATANKUASA ETIKA UNIVERSITI UNTUK PENYELIDIKAN MELIBATKAN MANUSIA (JKEUPM)
UNIVERSITI PUTRA MALAYSIA, 43400 UPM SERDANG, SELANGOR, MALAYSIA

BORANG 2.4: PENERANGAN DAN PERSETUJUAN RESPONDEN

Sila baca maklumat berikut dengan teliti. Sekiranya anda mempunyai sebarang pertanyaan, sila kemukakan kepada penyelidik.

1.TAJUK KAJIAN

Pengetahuan, kesedaran dan persepsi terhadap ujian HPV di kalangan staf UPM.

2. PENGENALAN

Kajian ini merupakan sebuah projek yang dijalankan oleh pelajar sarjana muda kursus Doktor Perubatan Universiti Putra Malaysia yang berlangsung mulai Jun hingga Oktober 2020 di kalangan staf UPM. Jumlah peserta yang terlibat dalam kajian ini adalah lebih kurang 241 peserta. Projek penyelidikan ini dijalankan oleh tiga orang pelajar perubatan dan diselia oleh dua orang pensyarah perubatan.

HPV ialah jangkitan virus yang kerap berlaku yang boleh menyebabkan perubahan tidak normal kepada sel dan membawa kepada kanser serviks.Salah satu langkah pencegahan yang boleh diambil untuk mengelakkan perkara ini adalah dengan melakukan ujian saringan seperti Ujian PAP Smear dan HPV. Walau bagaimanapun, kebanyakan masyarakat masih tidak biasa dengan ujian HPV berbanding dengan PAP Smear. Dengan meningkatkan pengetahuan dan kesedaran tentang ujian HPV, ia boleh menjadi kunci bagi mengurangkan morbiditi dan mortaliti kanser serviks yang merupakan salah satu daripada kanser biasa di Malaysia. Oleh itu, tujuan kajian ini adalah untuk menentukan pengetahuan, kesedaran dan persepsi terhadap ujian HPV di kalangan kakitangan UPM.

Sila tandatangan di sini sekiranya anda telah membaca dan memahami kandungan halaman ini ____

3. APAKAH YANG PERLU ANDA LAKUKAN?

Soal selidik ini mengandungi Bahagian A sehingga Bahagian D. Bahagian A adalah mengenai maklumat peribadi dan faktor sosiodemografi; Bahagian B adalah mengenai kesedaran tentang ujian HPV; Bahagian C adalah mengenai pengetahuan tentang ujian HPV; dan Bahagian D adalah mengenai persepsi tentang ujian HPV. Anda dikehendaki menjawab semua soalan.

4. SIAPA YANG TIDAK BOLEH MENYERTAI KAJIAN INI?

Responden yang tidak memenuhi syarat di bawah akan dikecualikan daripada kajian ini:

-Kini bekerja di Universiti Putra Malaysia (UPM).
-Memahami Bahasa Inggeris dan Bahasa Melayu.
-Bersedia untuk memberi kebenaran untuk kajian ini.

5. APAKAH FAEDAH MENYERTAI KAJIAN INI?

a) KEPADA ANDA SEBAGAI PESERTA?

Responden boleh menyumbang kepada pemahaman yang lebih baik tentang pengetahuan, kesedaran dan persepsi di kalangan kakitangan UPM. Penyertaan anda adalah secara sukarela dan anda boleh menarik diri pada bila-bila masa tanpa penalti atau kehilangan faedah. Tiada perbelanjaan yang akan dikenakan jika anda menyertai kajian ini.

b) KEPADA PENYELIDIK?

Data yang diperolehi daripada kajian ini membolehkan para penyelidik mengkaji faktor sosiodemografi yang berkaitan dengan pengetahuan, kesedaran dan persepsi terhadap ujian HPV di kalangan kakitangan UPM. Penyelidik yang menjalankan kajian ini akan hanya berfungsi sebagai penyelidik dan tidak akan terlibat sebagai penasihat kesihatan.

6. ADAKAH IA BERISIKO?

Tiada apa-apa risiko terhadap peserta yang mengambil bahagian dalam menjawab kajian ini kerana soal selidik ini dijalankan dalam talian tanpa melibatkan interaksi bersemuka dengan responden. Oleh itu, tidak akan ada sebarang pampasan, insurans atau rawatan yang akan diberikan kepada peserta.

Sila tandatangan di sini sekiranya anda telah membaca dan memahami kandungan halaman ini ____

7. ADAKAH MAKLUMAT DAN IDENTITI SAYA KEKAL RAHSIA?

Semua maklumat yang diberikan oleh pihak responden akan disimpan dan tidak akan didedahkan kepada mana-mana pihak. Juruaudit, staf monitor yang berkelayakan, pihak JKEUPM dan pengawal selia mempunyai akses kepada respons saya untuk memastikan kajian yang dijalankan adalah betul dan data dicatatkan dengan betul. Semua maklumat yang telah diberikan oleh peserta akan dipindahkan ke komputer penyelia.Semua maklumat tersebut akan disimpan secara rapi selama 3 tahun ia dimusnahkan secara kekal. Kajian ini telah diluluskan oleh Jawatankuasa Etika Universiti untuk Penyelidikan Melibatkan Manusia (JKEUPM). Jika anda mempunyai sebarang pertanyaan atau aduan mengenai hak anda sebagai peserta dalam kajian ini, anda boleh menghubungi pihak JKEUPM di 03-9769 1002.

8. SIAPA YANG SAYA PERLU HUBUNGI SEKIRANYA SAYA MEMPUNYAI SOALAN TAMBAHAN SEMASA MENGIKUTI PENYELIDIKAN INI?

- Nor Fadlina binti Mazlan

  Email: fadlina.3511699@gmail.com

  H/P no.: 017-3253203

- Amanda Chin Yun-Vern

  Email: amandayay99@gmail.com

  H/P no.: 010-2293209

- Muhammad Haziq bin Nizaruddin

  Email: ickagitochisan1@gmail.com

  H/P no.: 018-3164815

Sila tandatangan di sini sekiranya anda telah membaca dan memahami kandungan halaman ini ____

9. PERSETUJUAN

Saya ……..… No. Kad Pengenalan. ……..…… beralamat…… ……..….. dengan ini bersetuju untuk mengambil bahagian secara sukarela dalam penyelidikan yang tersebut di atas *(kajian klinikal / percubaan ubat-ubatan / rakaman video / kumpulan sasaran / temuduga / soal selidik).

Saya telah diberi penjelasan secara menyeluruh mengenai penyelidikan ini dari segi metodologi, risiko dan komplikasi (seperti tertulis pada Helaian Penerangan Responden). Saya memahami bahawa saya berhak menarik diri dari penyelidikan ini pada bila-bila masa tanpa memberi sebarang alasan.Saya juga memahami bahawa sebarang maklumat yang berkaitan identiti saya akan dirahsiakan.

Saya *(berminat / tidak berminat) untuk mengetahui keputusan kajian yang melibatkan saya.

Saya *(setuju / tidak bersetuju) untuk imej / gambar / rakaman video / rakaman suara digunakan dalam apa jua bentuk penerbitan atau pembentangan. (sekiranya berkaitan).

*potong yang tidak berkenaan

Tandatangan ……..…… (*Responden*)

Tarikh :…….....

Tandatangan ……..…….

(*Saksi*)

Nama :……..…..

No. K/P :……..…..

Saya mengesahkan bahawa saya telah menerangkan kepada responden ini sifat dan tujuan penyelidikan yang tersebut di atas.

Tarikh ……..……

Tandatangan ……..…….

(*Penyelidik*)

Appendix 3: Questionnaire

English version:

Please answer ALL the questions below and tick (/) in the box which best describes you.

Section A : Personal and Sociodemographic Details

1. Age:

   □ Below 20 □ 20-29 □ 30-39 □ 40-49 □ 50-59 □ 60 and above

2. Gender:

   □ Male □ Female

3. Ethnicity:

   □ Malay □ Chinese □ Indian □ Other (Specify):

4. Marital status:

   □ Single □ Married □ Divorced □ Other (Specify):

5. Have you ever had sexual intercourse before?

   □ Yes □ No

6. Education level:

   □ Primary □ Secondary □ Diploma □ Degree □ Master/PhD □ Other (Specify):

Section B : Awareness of HPV Testing

1. Have you ever heard of HPV testing?

   □ Yes □ No

Section C : Knowledge of HPV Testing

1. Do you know how the HPV test is administered?

   □ Yes □ No □ Not Sure

2. What is the current HPV testing interval?

   □ Annually □ Once every 2 years □ Once every 3 years □ Once every 5 years

   □ Not Sure

3. If a woman tests positive for HPV, she will definitely get cervical cancer.

   □ True □ False □ Not Sure

4. A HPV test can be done at the same time as a pap smear test.

   □ True □ False □ Not Sure

5. A HPV test can tell you how long you have had A HPV infection.

   □ True □ False □ Not Sure

6. HPV testing is used to indicate if the HPV vaccine is needed.

   □ True □ False □ Not Sure

7. When you have a HPV test, you get the results the same day.

   □ True □ False □ Not Sure

8. If a HPV test shows that woman does not have HPV, her risk of cervical cancer is low.

   □ True □ False □ Not Sure

Section D: Perception of HPV Testing

1. Which option is effective for population-based cervical cancer screening?

   □ Papanicolaou (Pap) test alone

   □ Co-testing (Pap test in conjunction with HPV test)

   □ HPV test alone

Malay version:

Sila jawab SEMUA soalan di bawah dan tandakan (/) di kotak yang paling sesuai untuk anda.

Bahagian A : Maklumat peribadi dan Sosiodemografi

1. Umur:

   □ Kurang daripada 20 □ 20-29 □ 30-39 □ 40-49 □ 50-59 □ 60 dan ke atas

2. Jantina:

   □ Lelaki □ Perempuan

3. Etnik:

   □ Melayu □ Cina □ India □ Lain-lain (Nyatakan):

4. Status perkahwinan:

   □ Bujang □ Sudah berkahwin □ Bercerai □ Lain-lain (Nyatakan):

5. Pernahkah anda melakukan hubungan seks?

   □ Ya □ Tidak

6. Tahap Pendidikan:

   □ Sekolah Rendah □ Sekolah Menengah □ Diploma □ Degree □ Master/PhD

   □ Lain-lain (Nyatakan):

Bahagian B : Kesedaran tentang ujian HPV

1. Pernahkah anda terdengar mengenai ujian HPV?

   □ Ya □ Tidak

Bahagian C : Pengetahuan tentang ujian HPV

1. Adakah anda tahu bagaimana ujian HPV dijalankan?

   □ Ya □ Tidak □ Tidak Pasti

2. Apakah selang ujian HPV semasa?

   □ Setiap tahun □ Sekali setiap 2 tahun □ Sekali setiap 3 tahun

   □ Sekali setiap 5 tahun □Tidak Pasti

3. Sekiranya seorang wanita diuji positif HPV, dia pasti akan mendapat kanser serviks.

   □ Ya □ Tidak □ Tidak Pasti

4. Ujian HPV boleh dilakukan pada masa yang sama dengan ujian pap smear.

   □ Ya □ Tidak □ Tidak Pasti

5. Ujian HPV dapat memberitahu anda berapa lama anda telah mengalami jangkitan HPV.

   □ Ya □ Tidak □ Tidak Pasti

6. Ujian HPV digunakan bagi menunjukkan adakah vaksin HPV diperlukan.

   □ Ya □ Tidak □ Tidak Pasti

7. Apabila anda menjalani ujian HPV, anda akan mendapat keputusan pada hari yang sama.

   □ Ya □ Tidak □ Tidak Pasti

8. Sekiranya ujian HPV menunjukkan bahawa wanita itu tidak mempunyai HPV, risiko kanser serviksnya rendah.

   □ Ya □ Tidak □ Tidak Pasti

Bahagian D: Persepsi tentang ujian HPV

1. Pilihan mana yang berkesan untuk pemeriksaan kanser serviks berdasarkan populasi?

   □ Ujian Papanicolaou (Pap) sahaja

   □ Ujian bersama (Ujian pap bersempena dengan ujian HPV)

   □ Ujian HPV sahaja

Appendix 4: Ethical approval letter

Ref. no: UPM/TNCPI/RMC/JKEUPM/1.4.18.2
(JKEUPM) Date: 26 August 2020

Dear Prof./Dr./Mr./Ms.,

APPLICATION FOR JKEUPM ETHICAL CLEARANCE: APPROVED

With reference to the above, I am pleased to inform you that your application for ethical clearance for the research project entitled **'Knowledge, Awareness, and Perception of HPV Testing Among UPM Staff'** has been approved.

Please note that the official letter of approval will be issued as soon as possible. However, the ethical clearance is considered effective from the date of this email, and you may now proceed with your research.

Kindly remind the ethical approval is required in the case of amendments/ changes to the study documents/ study sites/ study team.

Researchers should also complete a Study Final Report upon study completion. The form can be obtained from the Ethics Committee for Research Involving Human Subjects (JKEUPM) website (http://www.tncpi.upm.edu.my/faildokumen).

If you have any enquiries, please contact Ms. Nurulhasanah Ishak (03-97691605) or Ms. Nor Ellia Abd Ajis (03-97691244).

Note: Please use this reference number for any transaction:- **JKEUPM-2020-242**

Thank you.

Yours faithfully,
Prof. Dr. Zamberi Sekawi
Chair
Ethics Committee for Research Involving Human Subjects
Universiti Putra Malaysia