



## Narrative Review of Cervical Cancer in Malaysia: Knowledge and Challenge

Wan Azani Mustafa<sup>1,2,\*</sup>, Afiqah Halim<sup>2</sup>, Khairur Rijal Jamaludin<sup>3</sup>, Hiam Alquran<sup>4</sup>, Syahrul Junaini<sup>5</sup>

<sup>1</sup> Advanced Computing (AdvCOMP), Centre of Excellence, Universiti Malaysia Perlis (UniMAP), Pauh Putra Campus, 02600 Arau, Perlis, Malaysia

<sup>2</sup> Faculty of Electrical Engineering Technology, Universiti Malaysia Perlis (UniMAP), Pauh Putra Campus, 02600 Arau, Perlis, Malaysia

<sup>3</sup> Faculty of Artificial Intelligence, Universiti Teknologi Malaysia, Jalan Sultan Yahya Petra, 54100 Kuala Lumpur

<sup>4</sup> Department of Biomedical Engineering, Jordan University of Science and Technology, Irbid 22110, Jordan

<sup>5</sup> Faculty of Computer Science & Information Technology, Universiti Malaysia Sarawak, 94300 Kota Samarahan, Sarawak, Malaysia

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### ABSTRACT

According to the 2019 Malaysia National Cancer Registry Report (MNCR), 3,981 cases of cervix uteri cancer were diagnosed between 2012 and 2016, compared to 4,352 cases in the 2007-2011 report. The third most common cancer in women was cervix uteri cancer, ranked ninth in Malaysia, up from seventh in the previous survey. Over the last five years, the incidence rate has dropped from 7.6 to 6.2 per 100,000 people. Cervical cancer is the most prevalent disease among women. The Pap smear is the main technique for identifying potentially cancerous cells. The purpose of this research paper is to investigate women's knowledge and understanding of cervical cancer in Malaysia, attitudes toward cervical cancer (CC) among Malaysian women, and the challenges faced by medical professionals. The primary articles came from the two established databases, which are SCOPUS and Web of Science (WoS). The advanced searching focuses on two keywords: cervical cancer and Malaysia. Based on previous research, the study involves an overview of women's awareness and knowledge, a cross-sectional study, a self-sampling device, and perceived barriers to having a pap smear test in Malaysia. Furthermore, it was discovered that ethnicity promotes HPV vaccines, and MSPs may be given for medical students' programs aimed at preventing the spread of cervical cancer, as well as vaccination subsidies. Providers and academia should co-operate to raise immunization coverage. The majority of women surveyed in Malaysia are women between the ages of 21 and 60. In contrast to other research, there is still a shortage of understanding about cervical cancer, which has resulted in implicit cluelessness and negative perceptions toward it. Regarding the risk aspects, there are two well-known among Malaysian women: unprotected sexual partners and sexually transmitted infections. Participants are aware that a normal Papanicolaou (Pap) smear would detect cervical cancer and that an operation may be an option. Besides that, people in Malaysia have a modest understanding of Pap smears as a preventative measure to diagnose and prevent Cervical Cancer at a preliminary phase. In summary, most women in Malaysia understand the importance of the Pap test screening technique for early detection and operation as a cure. More initiative will be needed with the potential to increase understanding of women's perceptions towards cervical cancer.

#### Keywords:

Cervical cancer; review; Malaysia

\* Corresponding author

E-mail address: [wanzani@unimap.edu.my](mailto:wanzani@unimap.edu.my)

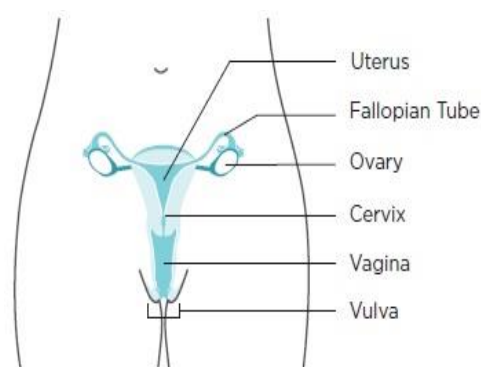
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## 1. Introduction

In 2020, cervical recorded 604,127 new cases and death in 341,831 cases, according to the Global Cancer Observatory (GCO) [1]. Cervical cancer ranks as the fourth leading cause of female cancer among women in Malaysia, which is about 1,740 new cervical cases are diagnosed, and about 991 death occur annually in 2020 [2]. The Ministry of Health Malaysia reported an average of 2000 to 3000 hospital admissions of cervical cancer cases per year in the country: most of them presenting late into the disease. Due to cervical cancer in Malaysia, the mortality rate is more than two times higher than Netherlands, United Kingdom and Finland. Even with the introduction of screening programs and immunization against cervical cancer, the mortality rate has not decreased [3].

The economic burden due to cervical cancer is enormous. It costs about RM312 million (USD76 million) to manage cervical cancer (from prevention to managing invasive diseases) annually in Malaysia. A big proportion (67%) of this is spent to manage invasive cancer cases [4]. The early diagnosis of cervical cancer is using Pap smear screening [5]. The analysis of the Pap smear slide is the most important task, while the recognition of disease or condition is essential in order to provide the necessary treatment [6,7]. Furthermore, for clinical research, the Pap smear diagnosis response to a treatment or medication must be observed or quantified [8,9]. Microscope images extensively used clinically for diagnosing Pap smear images. In the conventional method, using microscopic to capture the sample image, the sample images will risk blurring effects, noise, shadow, lighting, and artefacts problem on the images of thin smears [10,11].

The pap smear images could contain noises or other artefacts. The quality of pap smear images might be degraded due to contrast or noise. The conventional method has risks that can cause inaccurate results because the diagnosis depends on the human. Cervical cancer starts in a woman's cervix. Figure 1 shows a female reproductive system image [12]. It occurs due to the cells of the cervix grow abnormally [13]. This will invade other tissues around the cervix and organs, such as the liver or lungs. The risk of developing abnormal cells is associated with infection of human papillomavirus (HPV). The early symptoms of cervical cancer are abnormal menstruation, irregular menstruation, heavy menstruation, weight loss, pelvic pain, and vaginal discomfort [14,15].



**Fig. 1.** Female reproductive system [11]

HPV is a group of viruses that cause cervical cancer. HPV is spread through sexual contact. There is evidence that HPV is a factor for cancer anus, vulva, vagina and penis. There is more than 100 type of HPV, and HPV types 16 and 18 are responsible for about 70% of all cervical cancer cases worldwide [16]. The main purpose of this study is to explore and understand the cervical cancer situation in Malaysia in terms of its knowledge and challenges. The current narrative analysis was developed to answer the main research question: (1) What is the perception and motivation for cervical cancer disease among Malaysian women? (2) How difficult it is for the Malaysian government and society

to solve and motivate women to undergo Pap smear screening. The investigation's main focus was on people's perceptions of knowledge and challenge. More specifically, since this population is expected to be significantly affected by the impacts of vaccination programs due to their strong dependence on natural stability, special attention was paid to education and awareness. Aside from that, this section addresses the need for a thorough analysis of the cervical cancer situation. The outline of this review paper consists of three sections: Section 1 discusses an introduction and related research, and Section 2 describes the review data. The conclusions of this research are discussed in section 3.

## **2. Review of study**

### *2.1 Knowledge and Awareness*

In previous research, the researcher comes out with the issues surrounding drug use and the lack of screening methods in various communities. There are only two ways to eliminate the incidence of cervical cancer: get rid of all of the HPV, or decrease the numbers [17]. Even if the screening does not contain the whole HPV, it can be used as secondary prevention. Based on what we know about Malaysian women's attitudes and experiences, as well as economic and psychosocial problems, a comprehensive training programme must be devised. In addition, there is a major research gap in the area of cervical cancer survival and management. Cervical cancer is a major health and financial burden for women. While this programme was recently successful, its efficacy is still unknown. In reality, no study of rural Malaysians' awareness and understanding of HPV and vaccination has been conducted. Furthermore, another study has discussed a review of Malaysia knowledge of HPV and cervical cancer. This paper states that awareness remains low while the cases have increased [18]. The participant supports the vaccination and screening programmes for cervical cancer. One of the biggest obstacles to vaccination and pap tests is their consequences. In the end, women need to know about HPV and the facts that awareness is good for everyone. The initiative's goal was to mitigate the disease burden. The current school health programme has vaccinated female students to achieve this goal. The overall tests show that more people are aware of HPV before the campaign since the national HPV vaccination programme. The awareness of HPV and cervical cancer among participants remains low in Malaysia, even though the programme was implemented. Most participants are willing to take the vaccine due to supported vaccination coverage, protection, health advice and parents [19].

Nevertheless, family plays a huge role in vaccinating students. Parent education would affect school children's HPV vaccine. Understanding is finally raised as a result of the National HPV vaccination programme. However, most of the results show that most women are unaware of other places in terms of HPV and cervical cancer. Cervical cancer needs to be further publicised. The students will influence school vaccination rates to anticipate parental involvement HPV-infected women can screen and vaccinate themselves. The cultural differences among medical students have been identified to see if they play a role in their capacity to charge for HPV awareness [20]. A study on medical students concluded between June 2014 and November 2014, as a systematic analysis was performed in a private university using a convenient procedure was sampling. Researchers were doing a quick review in a convenient method on medical students to see whether there were any variations in their ability and see if this played a role in their capacity to detect HPV awareness [21]. The authors interviewed diverse ethnic medical students about the presence of HPV, and the ability to pay 305 people was surveyed on human papillomavirus identification, knowledge, and their demand for vaccinations. Everyone was made aware of the connection between HPV and cancer. 90% of the participants showed an appreciation of HPV infection disparity, expressed in the study's

findings. When it came to the HPV vaccine, 88 % of participants said they wanted to provide public guidance, but only 81.5 % planned to get the shot themselves. Previous research in this field had ignored ethnicity, resulting in lower vaccination rates for various ethnic groups. According to the results, all three ethnic groups have the same HPV skills, implying that students' public and private vaccination status must be comparable. Additionally, 80 % of medical students who know that pap tests avoid HPV find good grounds to excuse HPV vaccines. About the HPV vaccine, students should be conscious. As a result, all medical schools will be excluded. Theoretically, using an HPV vaccine is intended to eliminate all types of the disease over time (Chinese, Malaysian and India). To begin with, they discovered that ethnic groups are inspired to have vaccinations. HPV and MSPs should be offered for medical students' projects to prevent the spread of cervical cancer, and vaccine manufacturers and academics could work together to increase vaccination rates in the community. A survey was conducted, and it was discovered that students of various ethnicities are aware of HPV infection and the vaccine. This may be a way to evaluate the efficacy of Malaysian vaccinations and mortality prevention policies.

Additional research has been conducted in Ipoh, Malaysia, on the effects of Pap smear awareness and an HPV vaccination clinic. A study of 100 females between the ages of 16 and 65 who visited a medical clinic in Perak for a medical appointment between July 21<sup>st</sup> and August 8<sup>th</sup> looked at socio-demographic causes, facts about HPV and Pap smears, and awareness of Pap smear screening and vaccination [22]. Most respondents were between 26 and 45 (44 %). The overwhelming majority of those polled were well-informed about the dangers and benefits of pap smears and vaccinations. The general teaching staff and administration supported the Pap and HPV vaccinations, regardless of age. The level of cervical cancer prevention awareness has been linked to age. Women's attitudes about cancer, pap smears, and HPV vaccination have changed dramatically over time. The Malay ethnicity's younger and older women have a greater understanding of pelvic cancer. In this report, participants aged 21 to 56 years old showed a significant lack of knowledge about cervical cancer. Previous studies showed that a woman's unwillingness to get vaccinated against HPV was linked to her educational level. Preventing cervical cancer had an age-related impact. Cervical cancer can affect your attitude toward tests. Even though there had been no previous cancer reports, 81 % of the participants decided to get a Pap test. Table 1 reveals how much people know about preventing cervical cancer.

A pilot survey of HPV information and understanding was conducted at Universiti Zainal Abidin in 2015. For people between the ages of 15 and 45 who have recently acquired HPV, the participants' average age was 30 about 45 % of the participants were correct: its protection in pregnancy was appreciated by nearly 95 % of the participants, but only 73 % of them recognised that it is not a substitute for a Pap test. In comparison, nearly 45 % understood the economic value of human [23]. This study is critical in order to inform the public about HPV and improve their knowledge of the virus. HPV viruses are the leading cause of venereal disease, with a high mortality rate and many victims. HPV is found in nearly all 50-year-old women. HPV is a virus that almost everybody carries. However, the prospect of HPV continues to be downplayed among low-income and low-educated women. With the same objective, the study aims to determine the vaccination rate in rural Malaysians [24]. Penang had 116 residents, according to the census. Although 88.8 % of respondents were aware of HPV vaccination, only 42 % fully comprehended the true cost. It will set you back around RM27.

**Table 1**  
 Knowledge about cervical cancer prevention [22]

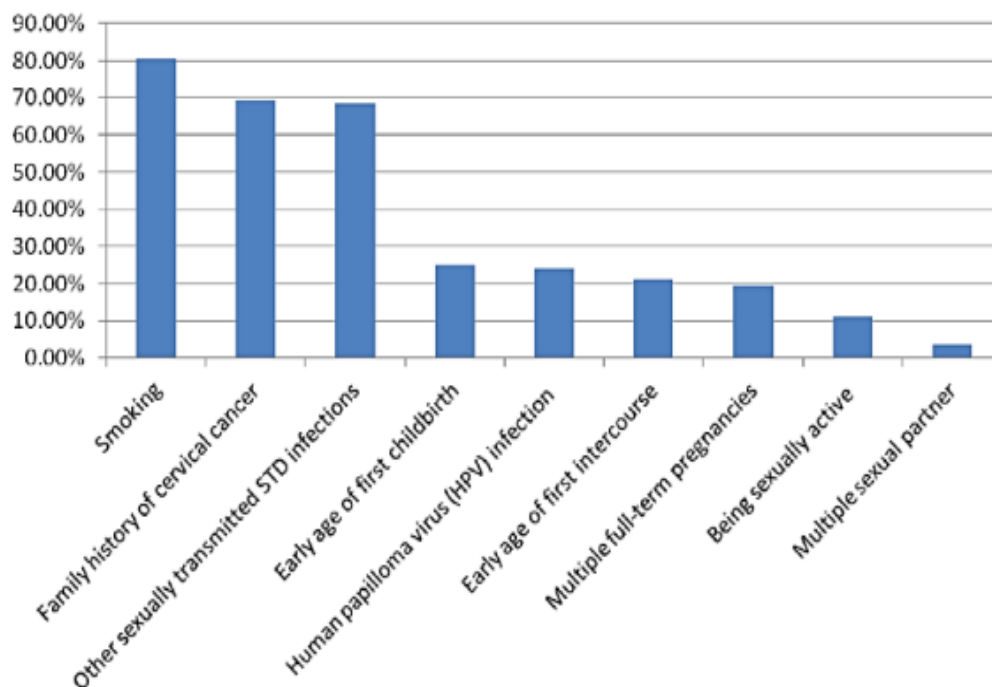
Knowledge about cervical cancer prevention	Correct	Incorrect
Pap smear is used for the early detection of cervical cancer.	80 (80%)	20 (20%)
Pap smear must be done regularly every 3 years.	58 (58%)	42 (42%)
HPV vaccination must be done before entering the reproductive age group.	65 (65%)	35 (35%)
Total knowledge about Ca Cervix prevention (based on median score)	73 (73%)	27 (27%)

HPV vaccines have long been known to be highly effective in preventing infection. Due to the high cost of HPV research, Vaccination is more effective than prevention in stopping the disease from developing. Malaysia devotes approximately RM150 million to the national HPV. Introduce an HPV vaccine schedule in addition to the screening. As a result, only a small percentage of the rural population is aware of HPV. For people who do not have enough money, using classes may help monitor vaccine rates. Many people responded, but it will encourage even more people. In these tests, the researcher conducts another study that requires participants to complete a survey on disease knowledge and comprehension for enlightening and raising awareness of the impact of female cancers in Malaysia (CC) [25]. With 21 cross-country data collected in Malaysia, a methodological experiment was conducted. Unlike other studies, cervical cancer was not caused by women being exposed to STDs when they grew older. Females tend to be unconcerned about the causes and symptoms of infection. Citizens discover that both Pap screening and service are efficient. Malaysian women seem to be aware of gender problems.

Furthermore, Malaysian women seem to be illiterate and have no interaction with healthcare professionals. As a result, women all over the world have low self-esteem. As a result, health education must go into greater depth in order to aid understanding and be more available. Recently, another survey was completed in Kuantan, Pahang [26]. About 120 people took part in the experiment. Surveys were used to choose the participants. 5 to 69.5 % of participants have never had a Pap smear, and 67.5 % have never had an HPV shot, according to 2013 data. The level of awareness was strongly linked to pap test results, but no connection was found between HPV and awareness. Patients' age has little to do with their knowledge standard (P455). Cervical cancer and HPV were, however, equally prevalent in both categories. It exposes the study' shortcomings in order to find new ways to increase women's awareness of cervical cancer and HPV contemptuous of Pap and HPV. Almost everyone was persuaded that races were the same. Individualized care is needed, and daily paps and HPV shots can improve a woman's productivity. This means that women's perceptions vary depending on where they live. Pap smear awareness reduces cancer anxiety for those who are blissfully unaware of HPV and Pap test findings. Both parental and healthcare clinics should work together to raise awareness of cervical cancer in the media. In Kedah, Malaysia, the researchers explored working women's knowledge, feelings, and behaviours, and socio-demographic bias [27]. Women aged 20 to 65 who had previously received a Pap smear diagnosis but had missed the knowledge had not regressed to abnormal Pap smear times were not included in the study. Furthermore, because of extended processing times and increased overcrowding, Malays tend to go to private hospitals in the towns instead. Control, greater comprehension, and better pap outcomes

are some of the related variables, even though there is a lot of information on the cervix land- Outside of health clinics, evolving instructional modules have been set up, growing Malaysian women's awareness of pap tests and mortality.

According to another research, the screening of female Iraqi immigrants in Malaysia are influenced by HPV was studied [28]. The average age of those who responded was 36. (0-61). Many women were unaware of the dangers of going undiagnosed with cancer. This emphasises the critical role of encouraging and motivating Iraqi women to learn about HPV science. In Malaysia, about half of the female immigrants have never heard of the HPV vaccine. This suggests that women's awareness of HPV is at an all-time low, following studies that revealed only about 20 % of women were aware of the connection between HPV and cervical cancer. The study emphasises the urgent need to educate and inspire Malay Muslim women in Iraq about the dangers they face. It's also critical to educate these women about the Malaysian government's scheme and look into women's global awareness concerning it. The HPV is a risk factor in cervical cancer, according to a significant number of respondents (76%) (Figure 2).



**Fig. 2.** Knowledge about risk factors in the study population (n=108) [25]

## 2.2 Knowledge and Awareness

The most common cancer in women is cervical cancer. It begins in the cervix and connects the vaginal canal to the entire uterus. This is more common in older women. Cervical cancer is caused by long-term human papillomavirus infection. Almost anyone carries HPV at some stage in their lives, but it can only be acquired by women. The distribution of HPV types in Malaysia has been the subject of many studies. In 2014, its research aim was to determine the prevalence of HPV in the population [29]. Single cases of HPV were far more common in 280 malignant tumours from four locations in Malaysia, according to real-time PCR analysis of 12 high-risk HPV genomes for analysis of 280 malignant tumours from four locations in Malaysia (55.7 % prevalence). According to research, the most common in all ethnic groups was the prevalence of HPV-16 that was substantially higher in Chinese and South-Asian patients (75.9% vs 63.7%). The distribution in Asia was found to be



clustered, including Hong Kong, Taiwan, Japan, Korea, and Malaysia. The prophylactic HPV vaccine should be provided to the majority of Malaysian women. I'm hoping that the next-generation HPV vaccine would cover HPV 58, 52, and 33-gene types as well. Hospital Universiti Sains Malaysia has previously recorded a five-year prognosis for cancer patients study [30]. The results show that stage I, II, stage III, and stage IV are 51.7, 40.8, and 19.6 % diagnosed at a late level IV had a 33 % survival rate.

Another research looked at why there is such a high prevalence of cervical cancer in Malaysia, and it used targeted opportunistic screening instead of population-based approaches [31]. This study aimed to see how effective the Pap test is on Malay women. A randomised cluster analysis was conducted with teachers from 400 randomly selected public secondary schools in Kuala Lumpur. Natural cervical screening is available for the control group if they participated in a workplace screening programme. The number of women in the experiment was slightly lower in the control group. Dating would become more popular among well-educated women due to occupational health promotion, and these programmes should be included in efforts to reduce the burden of cervical cancer in these countries. Cervical cancer incidence and mortality may also be reduced dramatically as a result of this screening. Screenings in the workplace can be a feasible alternative to existing opportunistic screening practices. Malaysia's long-standing cervical cancer crisis can be seen as a positive work-based health initiative. Malaysia had a lower survival rate than non-Malays. However, the difference was not significant. Patients treated with HUSM depend on the degree of detection to predict their health outcomes. The log-rank test was used to estimate the probability of survival. The five-year mortality rate was 37.7 %, with a 40.8-month survival. Patients admitted to the hospital to stage III and on have the lowest survival. Overall, 5-year survival for this sample of patients with cervical cancer was low, and that of those who received palliative care only was good. Besides that, cervical cancer screening in Klang Valley, Malaysia, was investigated [32]. This research aimed to determine cervical cancer screening and related factors in the Klang Valley, Malaysia congregation. In a cross-sectional study of ages 18 to 69, a cross-item comparison was made of three churches that are over 95 % African. They were sent a survey to finish so that the population could understand it; the questionnaire was written and self-explained. Finally, the women's cumulative average was deplorable. As a result of marital status, obtaining a Pap test, and knowledge-having biomarkers, population-based screening and preventive services are needed. Table 2 shows the details about the participants based on relative obstacles to having a Pap smear test; more than 60 % of the participants were unsure about a fact that was critical to the risk factors.

Another research looked at why there is such a high prevalence of cervical cancer in Malaysia, and it used targeted opportunistic screening instead of population-based approaches [28]. This study aimed to see how effective the Pap test is on Malay women. A randomised cluster analysis was conducted with teachers from 400 randomly selected public secondary schools in Kuala Lumpur. Natural cervical screening is available for the control group if they participated in a workplace screening programme. The number of women in the experiment was slightly lower in the control group. Dating would become more popular among well-educated women due to occupational health promotion, and these programmes should be included in efforts to reduce the burden of cervical cancer in these countries. Cervical cancer incidence and mortality may also be reduced dramatically as a result of this screening. Screenings in the workplace can be a feasible alternative to existing opportunistic screening practices. Malaysia's long-standing cervical cancer crisis can be seen as a positive work-based health initiative. Also, a report was done on cervical cancer survival rates in Malaysia. Malaysians have the best long-term prospects of success but are falling short-term (73.8 %). Overall recovery time in this study was 68 months, and the 5-year survival rate was 71.1 %, the primary factors determining survival [33]. A database was studied from January 2000 to December

2005 in the National Cancer Registry (MNCR) and the National Health Informatics (NHIC). The results of the Kaplan-Meier analysis were computed. The log-rank test was used to equate age vs ethnic diversity; the five-year survival rate for Malaysian patients with cervical cancer is higher. Age and race are important in predicting mortality rate. Other lifestyles should be included in the cancer registry, according to experts. The cancer registry record should be supplemented with information on other variables such as infection phase, cancer type, and treatment case model. Al-Naggar *et al.*, [34] investigate young women's experience and screening-approachability of cancer in Malaysia. Cervical cancer awareness and education are important components of the challenge recently implemented in Malaysia for 287 female tertiary students. Even though only 6 % of the participants had had previous Pap tests, nearly all of them were aware of the risk factors. In conclusion, the biggest obstacle to treating cervical cancer is an apprehension of the Pap test. Participants' least favourite challenge was getting no support. Teenagers, on the other hand, aren't great at taking exams.

The inclusion of reproductive health topics is intended to raise awareness about the importance of cervical cancer screening. Since cervical cancer screening is not widely available in Malaysia, researchers had to rely on a self-sampling kit to get to the bottom of the problem. In total, 258 women from both urban and rural areas served on these projects. The entire study's sample was randomly assigned to reduce sampling bias [35]. In another study, Aljunid *et al.*, [36] found the burden of HPV vaccine-induced cervical disease in Malaysia. The study's main aim is to assess the effects of HPV-related cancers and precancerous lesions. The second aim is to forecast long-term outcomes using a prevalence-based approach, which found that nearly 4,696 new cases of cancer are reported every year, with 1,372,000 cases of premalignant lesions resulting in an additional RM 12.4 million in economic loss. As opposed to quadrivalent inoculation, bivalent vaccination would prevent 4,199 cervical cancer cases, while quadrivalent inoculation would prevent 3,804 cases. The bivalent vaccine was estimated to cost \$45.4 million a year to avoid \$42.9 million and save \$58. According to the results, the clinical and economic burden of cervical cancer and precancerous lesions may be decreased. The same objective, Sharifa and Aljunid [37] again studied the cost-effectiveness of HPV vaccination's efficacy in cervical cancer prevention. This initiative would have a major effect on public health and patient satisfaction. A total of 502 cancer patients were interviewed using expert panels to measure treatment costs by severity and directly with 502 individuals from public Gynecology hospitals. The three HPV tests are combined in this test (screening plus vaccination). As a result, a higher quality of life is associated with a longer life expectancy. Because of the feasibility and adherence among Malaysian women in this study, it was cost-effective for vaccinations (Table 3).

**Table 2**  
Perceived barriers to having pap smear test (N=320) [32]

Item barriers	Strongly Disagree, n (%)	Disagree, n (%)	Not sure, n (%)	Agree, n (%)	Strongly Agree, n (%)
I am physically healthy, so I do not need a Pap smear	3 (0.9)	101 (31.6)	200 (62.5)	8 (2.5)	8 (2.5)
Is not important for a woman to have Pap smear	0 (0)	2 (0.6)	193 (60.3)	39 (12.2)	86 (26.9)
It is too embarrassing to do Pap smear	1 (0.3)	97 (30.3)	207 (64.7)	8 (2.5)	7 (2.2)
Woman has not had sex; pap smear will take away her virginity	4 (1.3)	87 (27.2)	219 (68.4)	4 (1.3)	6 (1.9)
Pap smear is painful	3 (0.9)	77 (24.1)	227 (70.9)	8 (2.5)	5 (1.6)



Doing Pap smear will only make one worry	0 (0)	93 (29.1)	212 (66.3)	9 (2.8)	6 (1.9)
Lack of female screeners in health facilities is a reason for not doing Pap smear	1 (0.3)	100 (31.3)	201 (62.8)	10 (3.1)	8 (2.5)

**Table 3**

The difference in QOL scores between cancer patients and the general female population [37]

Parameter	Cancer n=502		General n=1498	
	Mean	SD	Mean	SD
Physical functioning	51.79	33.98	84.52	18.52
Role limitation-physical	46.71	47.59	81.47	32.55
Bodily pain	61.9	21.06	68.96	17.56
General health	59.38	17.61	66.03	20.15
Vitality	59.56	16.46	65.10	17.54
Social functioning	70.89	21.63	82.94	19.6
Role limitation-emotional	50.40	47.83	76.90	37.25
Mental health	67.12	15.53	73.20	17.6

One of the risk factors for cervical cancer development is tobacco smoking because of tobacco-based carcinogenic metabolites in cervical cells of female smokers. Tobacco-based carcinogenic metabolites can be a risk factor in the development of developing cervical cancer in women. Tan *et al.*, [38] presented a case-control analysis on the function of the polymorphism of the CYP1A1 gene in cervical carcinogenesis, focusing on a population of Malaysia that consists of many ethnicities. The analysis included two totals of one hundred and one hundred and one formalin-embedded paraffin-embedded paraffin samples. Studies show, there are no links between the CYP1 MspI polymorphism and cancer in Malaysian women.

Nevertheless, based on ethnic stratification, a 4.66-fold increase in risk was found in Malay females, but not in other ethnic groups. One downside of this analysis is that it used archival DNA samples only a total of 201 samples randomly have been used in this study which is 195 thin prep pap smear samples from HPV negative and cancer-free females as control and 106 formalin-fixed paraffin-embedded samples from females with invasive cervical cancer as cases group. The result shows no signs to relate the CYP1A1 MspI polymorphism and cervical cancer in the general Malaysian female population. Nevertheless, based on the ethnic stratification, the variant cervical cancer genotype was significantly associated with a 4.66-fold increase in cervical cancer risk in Malay females, and no significant association was observed in the Chinese and Indian females. A limitation of this study is the deficiency of data on the smoking status because this study was done retrospectively by using the DNA samples collected from archival tissues only. Besides, the SF-36 is used to measure a patient's quality of life, which incorporates emotional and physical dimensions into two major domains [39]. The key outputs are the PCS and MCS (MCS). The two classes have different characteristics, but you cannot quantify the differences. Researchers conducted a cost-effectiveness analysis comparing the bivalent (BV) and quadrivalent (QV) HPV (QV) to cervical cancer screening: Pap smears, and cervical cancer vaccinations (QV/BAC), and cytology (HPV/CYT) (screening plus vaccination). Cost and quality of life questions were used to determine the costs for the three types of cervical, vaginal, and vulval cancers. The findings are focused on 502 cancer patients and conclude that the quadrivalent vaccine is less costly. Additionally, at high population coverage, the quadrivalent vaccine is more cost-effective than any approach, including pap screening.

#### 4. Conclusions

According to the World Health Organization, increasing early-stage cancer detection, screening, and diagnosis increases cancer patients' chances of survival dramatically. The 2019 World Cancer Day theme, 'I Am and I Will,' seeks to empower and encourage people, the medical community, and policymakers to take action to raise public awareness and increase access to early detection, screening, and diagnosis. Cancer awareness campaigns will improve these habits by emphasizing early detection and facilitating culturally relevant early help-seeking. Like most developed and advanced developing countries, Malaysia is on the verge of an epidemiologic change, with diseases related to lifestyle, especially cardiovascular diseases and cancers, becoming more common. Over the past 20 years, malignant neoplasm has remained one of the five leading causes of national mortality, and its absolute numbers have risen. Cancer was responsible for 13.6 % of all deaths in Ministry of Health (MoH) hospitals in 2015, up from 8.9 % in 1996. The Malaysian Ministry of Health gathered prominent oncologists, clinicians, public health specialists, pathologists, radiologists, academia, scientists, researchers, and policymakers in 2015 to review and update the National Cancer Control Blueprint (NCCB) 2008-2015, and proposed the National Strategic Plan for Cancer Control Programme (NSPCCP) 2016–2020 to replace the NCCB. The aim of the NSPCCP 2016-2020 is to reduce the harmful effects of cancer by lowering morbidity and mortality and improving the quality of life of cancer patients and their families, which is close to the goal of the NCCB 2008-2015. Aside from that, Malaysians have limited knowledge of Pap smears as a preventative measure to detect and prevent Cervical Cancer in its early stages. In conclusion, women in Malaysia acknowledge regular Pap smears as a diagnostic tool and operation as a treatment. More effort would be aimed at improving awareness of women's attitudes toward cervical cancer. Furthermore, Malaysia is developing a significantly thoughtfully conceived screening system that must also consider attitudes and awareness regarding women and socioeconomic and psychological concerns. There is still a significant void in clinical trials in Malaysia on the occurrence, treatment, and preservation of patients with cervical cancer. This review could inspire future researchers to recognize the relevant research correlated risks with a few of the approaches as well as provide a strong foundation for planning and implementing optimization techniques or developing new alternatives.

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