

A DESCRIPTIVE STUDY ON THE MALAYSIAN PARENTS' HPV VACCINATION INTENTIONS

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Abstract

Cervical cancer is the second most frequent cancer in low-income countries and the fourth in the world, and it is the most common cancer of the female reproductive organs. In Malaysia, cervical cancer is the second most frequently occurring cancer (after breast cancer) amongst women aged 15 and 44 years. When the whole population is considered, Malaysia's cervical cancer mortality is two-fold higher than countries like the United Kingdom, Finland, and the Netherlands. Despite the free Human papillomavirus (HPV) immunization, acceptance of the vaccination program is not guaranteed as some parents are still against it for various reasons. Hence, this study attempts to identify determinants of parents' HPV vaccination intentions such as attitude, subjective norms, perceived behavioural control, anticipatory regret, and trust in government. This quantitative study used a purposive sampling technique, which meant that only parents or caregivers over 18 with at least one child under 12 were eligible to participate. The sample size of the study is 318 respondents. This study found that all determinants of HPV vaccination intention scored high Mean, and the majority of the parents were willing to vaccinate their children against HPV.

Keywords: Cervical Cancer, HPV, Sexually Transmitted Infection, Vaccination Intention

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Introduction

Immunization is a global health and development success story, saving millions of lives every year. Vaccines are universally considered one of the most successful and cost-effective medical interventions ever introduced. Between 2010 and 2015, more than 5 million deaths were averted annually by vaccinations worldwide. Many people, especially parents, are aware of vaccinating children because many statistics released by scholars and the government have found that vaccination can reduce child mortality due to various diseases, including The Human Papillomavirus (HPV). Vaccines are, therefore, a critical tool to reduce health inequality, ensure the most outstanding possible protection of health and well-being, promote peaceful and inclusive societies and strengthen the means of implementation of the Sustainable Development Goals (SDGs).

HPV is always associated with sexually transmitted infection (STI), especially cervical cancer. Among the common causes of HPV infection are many sexual partners, sexual activity, and age of first sexual intercourse (Catalano et al., 2017). HPV can also bring male health problems, such as genital warts and anal, penile, and oropharyngeal cancers. However, World Health Organization (WHO) (2017) announced that males vaccination is still less widespread in some European countries. HPV is often associated with women and causes men not to take the story into account. Although men can also be infected with HPV-related diseases, more concern should be given to women because it profoundly affects most women, causing many to die.

In Malaysia, cervical cancer is the second most frequently occurring cancer (after breast cancer) amongst women aged 15–44 years (Zaridah, 2014). Between 2007 and 2011, a total of 4352 new cases of cervical cancer were reported by Malaysian National Cancer Registry Report (Azizah et al., 2017). Of these cases, 34.5 per cent occurred among women aged 50–59 years, and 64.4 per cent were detected at stages 1 and 2 (Azizah et al., 2017; Bruni et al., 2018). The age-standardized cervical cancer rate is 7.8 per 100 000 females, with 4352 new cases reported between 2007 and 2011 (Azizah et al., 2016). This situation certainly harms the country both socially and economically. High mortality rates will affect the country's productivity and, in turn, slow down the development process. In addition, the high mortality rate will also reduce the market size of a country as planned by the Malaysian government in the National Population Policy. In addition, the high mortality rate among women will also impact family institutions because women are important actors in the development of a family.

When the HPV vaccination was introduced in 2006, most countries came out with HPV vaccination programs to prevent cervical cancer (World Health Organisation, 2017). The HPV vaccination was predicted to prevent 89 per cent of cervical cancer caused by HPV 16 and HPV 18 (Kim et al., 2009) and save substantial annual costs for HPV-related treatments (Tota et al., 2014). The Ministry of Health recognized that the vaccine would be a valuable addition to its cervical cancer prevention approach (Saidatul et al., 2018). Mona et al. (2019) highlighted that vaccination is essential to reduce the occurrence of cervical cancer.

Despite the provision of a free HPV immunization (Mona et al., 2019), acceptance of the vaccination program is not guaranteed as some parents are still against it due to various reasons such as poor knowledge and misconceptions regarding HPV vaccination (Ezat et al., 2013; Wong et al., 2016). Kornides et al. (2018) contend that parental declination is a recognized contributor to low HPV vaccination coverage. Therefore, this study was conducted to identify parents' HPV vaccination intentions and its determinants such as attitude, subjective norms, perceived behavioral control, anticipatory regret, and trust in government. In determining adherence to the HPV vaccination, an important role is played by parents' decisions to have adolescent daughters and sons vaccinated (Caso et al., 2019). This study aligns with the third goal of Sustainable Development Goals (SDGs), which concerns promoting health and well-being. It is essential to guarantee a healthy life and promote well-being in all age groups.

Literature Review

HPV in Malaysia

In 2006, 4 years of planning were started by the Ministry of Health, Malaysia (MOH), to implement the HPV vaccination program. Inter-agency and multisectoral collaborations were developed for Malaysia's HPV school-based immunization program. It was approved for nationwide school base implementation for 13-year-old girls or first-year secondary students in 2010 (Nor Asiah Muhamad et al., 2018). The HPV vaccines became available in 2006 (Sharifa Ezat and Syed, 2011). Since then, efforts have been initiated to introduce the HPV vaccination in Malaysia. The HPV Immunisation Programme in Malaysia was launched in August 2010 and added to the list of the National Immunisation Programme which provides selected vaccines free of charge to all residents as a public health service (Sharifa Ezat et al., 2013).

The Ministry of Health (MOH), through the school-based services, has introduced the HPV vaccination program for school girls at age 13. Mona et al. (2019) contend that free vaccination is provided for schoolgirls aged 13 for all three doses, which must be taken within six months. For females of age 18–26, a similar program is offered at clinics owned by the National Population and Family Development Board (LPPKN) or works in conjunction with LPPKN. The HPV vaccination program is projected to reduce cervical cancer incidence associated with HPV16 and 18 among immunized girls in the next 20 years (Nor Asiah Muhamad et al., 2018). In 2019, HPV vaccination was free to Malaysian citizens or Permanent Residents (PR), females born in 1992–1996, single or not yet married, not pregnant, and who have not suffered from severe allergies that required treatment at a hospital (LPPKN, 2019).

Determinants of HPV Vaccination Intention

The Theory of Planned Behavior (TPB) has effectively explained various health behaviors (Carfora et al., 2019), including parental prevention behaviors such as vaccinating their children (Askelson et al., 2010). The TPB indicated that attitude, subjective norm, and perceived behavioral control (PBC) influence behavioral intention, which predicts the related behavior. Attitude towards a behavior refers to the individual's overall evaluation of the behavior. Subjective norm is described as the individual's perception of the social expectations towards a behavior. Perceived Behavioral Control (PBC) is the individual's perception of the ease or difficulty of the particular behavior or perceived confidence that they can perform it (Ajzen, 1991). In Netherland, Hofman et al. (2014) found that Dutch parents, who had a positive attitude, high subjective norms, and PBC concerning HPV vaccination, also had a high intention to vaccinate their children.

Anticipated regret refers to the anticipated negative feeling when an individual thinks about the possibility of not performing a behavior (Sansberg & Conner, 2008). Askelson et al. (2010) found that anticipated regret predicted HPV vaccination intentions among young men. This result suggests that such anticipatory emotions may play a vital role in healthcare decision-making. Regarding the role of trust in predicting adherence to health-protective behaviors, previous research found that trust in health authorities predicted people's adherence to recommended behaviors (Capone, 2016). Prati et al. (2011) indicated that in the case of the pandemic influenza H1N1 in 2009, trust in health authorities played a significant role in predicting participants' intentions to adhere to the recommended protective behavior. A lack of trust in health authorities was the most frequently reported barrier to HPV vaccination (MacArthur, 2017). Moreover, trust in the healthcare institution about the HPV vaccination and its safety and efficacy increased intention and vaccine uptake (MacArthur, 2017).

Methods

This quantitative study used a purposive sampling technique, which meant that only parents or caregivers over 18 with at least one child under 12 were eligible to participate. The sample size of the study was 318 parents in Malaysia. All continuous variables were measured using 5-point Likert-type scales to ensure the measurement of different constructs was consistent. This is because most of the instruments used in the study initially included this type of scale, and the number of points in Likert-type scales does not affect their metric properties. A focus on the parents' intention is justified based on the past research showing that in many countries, the parents are the person who makes health decisions about their children (Parrello et al., 2014), including choices regarding vaccination (Dempsey et al., 2019). Data were collected using an online questionnaire which was self-administered by the respondents. Details given by the respondents were kept confidential and were not exposed to other parties. The information obtained from questionnaires was the respondents' demographic profile, parents' attitude towards HPV vaccination, subjective norms, perceived behavioral control, anticipatory regret, trust in government, and parents' HPV vaccination intention. The raw data were processed and entered for data analysis. Data collected was sorted out and processed using SPSS. The descriptive analysis, which consists of frequency, percentage, mean, and standard deviation, was employed to describe participants' level of intention to vaccinate their children against HPV and its determinants (attitude, subjective norms, perceived behavioral control, anticipatory regret, and trust in government).

Findings

Demographic Profile

Table 1 illustrates the profile of the respondents who participated in the survey. This study comprised 318 respondents (parents) who have at least one child. Before the data collection took place, the respondents were informed and explained about the study's purpose and the study's contributions to the community. The descriptive statistics indicated that most respondents were female (72.6%), with the male making up the remaining 27.4 per cent. The largest age group was represented by the 41 years old and above (28.3%), and the majority of the respondents possess at least one child (35.2%). In addition, most of the respondents' household monthly income (40.9%) was RM 1000 - RM 3900. Concerning ethnicity, the majority of them were Malays, who accounted for 78.6 per cent, followed by Chinese

(10.7%), Indian (8.2%), and others (2.5%). As shown in Table 1, most of them (41.5%) hold degrees, and only 1.3 per cent hold PhD.

Table 1. Profile of Respondents for Quantitative Study (N = 318)

Variable	Frequency	Percentage (%)
Gender		
Male	87	27.4
Female	231	72.6
Age		
20 to 24 years old	36	11.3
25 to 30 years old	47	14.8
31 to 35 years old	89	28.0
36 to 40 years old	56	17.6
41 and above	90	28.3
Number of Children		
1	112	35.2
2	70	22.0
3	67	21.1
4	40	12.6
5	29	9.1
Household Monthly Income		
RM 1000-3900	130	40.9
RM 4000-8000	128	40.3
RM 8100 & above	60	18.9
Ethnicity		
Malay	250	78.6
Chinese	34	10.7
Indian	26	8.2
Others	8	2.5
Educational Level		
School	57	17.9
Diploma/Certificate	105	33.0
Degree	132	41.5
Master	20	6.3
PhD	4	1.3

Descriptive Analysis

Responses Across Independent and Dependent Variables

The descriptive statistics for independent variables (attitude, subjective norms, perceived behavioral control, feeling regretful, and trust in government) and HPV vaccination intention were presented in Table 2. The respondents were asked about their knowledge and feeling towards vaccine (attitude), their intentions to vaccinate their children were influenced by the important persons around them such as family members, doctors, and friends (subjective norms), the level of convenience in vaccinating their children (perceive behavioral control), feeling regretful if they do not vaccinate their children (feeling regretful), trust towards government and their likelihood to vaccinate their children.

Based on Table 2, it can be observed that most of the respondents have a positive attitude towards vaccines, subjective norms, perceived behavioral control, moral norms, and recycling intentions. An interesting observation can be made in this analysis, whereby trust towards government scores the highest mean ($M = 4.6719$, $SD = .69873$) among the independent variables, followed by attitude ($M = 4.6468$, $SD = .67732$), subjective norms ($M = 4.5870$, $SD = .65736$), feeling regretful ($M = 4.5377$, $SD = .78396$) and perceive behavioural control ($M = 4.4319$, $SD = .81138$).

Intention to vaccinate their children against HPV is measured to know the likelihood or the probability of the parents vaccinating their children. Table 2 illustrates that most respondents agreed that they have high intentions to vaccinate their children against HPV ($M = 4.6688$, $SD = .72750$).

Table 2. Descriptive Statistic for Scale Variables

Variables	N	Mean	Std	Min	Max
Intention	318	4.6688	.72750	1	5
Attitude	318	4.6468	.67732	1	5
Subjective Norms	318	4.5870	.65736	1	5
Perceive Behavioural Control	318	4.4319	.81138	1	5
Feel Regret	318	4.5377	.78396	1	5
Trust on Government	318	4.6719	.69873	1	5

Note: 1=S. Disagree, 2=Disagree, 3=Neutral, 4= Agree, 5=S. Agree

Discussion

As explained in the previous section, this study found that all variables (attitude, subjective norms, perceived behavioral control, anticipated regret, and trust in government) had a high Mean score (above Mean 4 and closer to 5). Besides that, most of the respondents believed that they were willing to vaccinate the HPV vaccines to their children. The results of this study are in line with the study carried out by Caso et al. (2019). The descriptive statistics show that Italian mothers had high scores on intention, attitude, subjective norm, PBC, anticipated regret, and trust in their study.

In terms of attitude, most of the respondents have a positive attitude towards HPV vaccination intention. It shows that most parents believe that it is essential, beneficial, and worthwhile to vaccinate their children against HPV as the vaccines bring positive outcomes (prevention of cervical cancer) to their children. Also, in the Italian context, the parent's attitude, intention, and acceptance of HPV immunization determine the females' adherence to the HPV vaccinations (Haghshenas et al., 2013).

In this study, the Mean for subjective norms is high (Mean = 4.59). It can be interpreted that most of the respondents believed that the people surrounding the parents, such as their family, other mothers, and doctors encouraged them to vaccinate their children against HPV. Besides that, this study also found that the Mean score for perceived behavioral control is high (Mean = 4.43). It can be construed that most parents believe that it is easy for them to vaccinate their children against HPV since the government provides the vaccine for free. Hence, they feel the confidence to vaccinate their children against HPV.

In terms of anticipatory regrets, the Mean score is 4.54 and can be considered high. In other words, most of the parents in this study anticipated negative feelings if they did not allow their children to be vaccinated against HPV. The findings of this study are in line with the study carried out by Askelson et al. (2010). Askelson et al. (2010) found that anticipated regret predicted HPV vaccination intentions among young men. This result suggests that such anticipatory emotions may play a decisive role in healthcare decision-making.

Lack of trust and confidence in government authorities increases the likelihood of vaccine hesitancy and refusal (Casiday et al., 2006; Larson et al., 2018). Interestingly, the trust in government scored the highest Mean in this study (Mean = 4.67). According to Trenta et al. (2021), in Sydney and Melbourne, higher trust and confidence in government were associated with a greater likelihood of willingness to receive the vaccine. This study also found a high level of intentions of parents to vaccinate their children against HPV (Mean = 4.67). The finding is in line with the study Fairuz Fadhilah et al. (2016). Their study found that the number of respondents who indicated their intention to get vaccinated against HPV was high since the respondents have adequate knowledge of cervical cancer.

Conclusion

The HPV vaccine is a critical way to prevent infection and the spread of HPV. It works best when given before someone might be exposed to the virus. Some parents consider that there is no need to give the HPV vaccine to their children because the vaccine given can only prevent a sexually transmitted infection. However, this study found that parents' desire to allow their children to be given the HPV vaccine was high. In addition, most of them also have a positive attitude towards giving the HPV vaccine. They feel that the HPV vaccine will benefit their children in the future. The study also found that the desire of parents to give HPV vaccine to children is due to the influence of people around such as family members, doctors and friends. In addition, they also think that it is relatively easy to get the HPV vaccine for their children because the vaccine is provided free of charge by the government. Trust in the government and regretful are also one of the important factors that cause these parents intend to vaccinate their children against HPV.

Although the results of this study found that parents' desire to give HPV vaccine to their children is high, continuous efforts need to be upheld to ensure the level of parental confidence to give this vaccine is at an optimal level. There is an anti-vaccine movement, especially on social media, that often gives false propaganda regarding the safety and effectiveness of this vaccine. Therefore, the government needs to redouble its efforts to combat this group. More effective education programmes are needed to enhance knowledge and health beliefs and ensure sustainable reductions of HPV infection and associated diseases. It is hoped that changes over time and intervention reflect an improvement in parents' knowledge and acceptance of HPV vaccination.

NGOs can also assist the government by providing up-to-date information to Malaysians on the importance and effectiveness of the HPV vaccine. They also need to inform parents that HPV can not only infect women but can also infect men. Parents also need to seek the latest knowledge and be good at filtering the facts on the vaccine. This study employs descriptive analysis to measure HPV determinants (attitude, subjective norms, perceived behavior control, anticipatory regret, and trust in government) and parents' HPV vaccination intentions for their children. It is suggested that future researchers can embark on a correlational study to examine the variables associated with parents' HPV vaccination intentions for children. The proposed study is pertinent as it can help the policymakers and the MOH formulate a sound public policy to encourage Malaysian parents to vaccinate their children against HPV.

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