



# Effectiveness of an educational intervention in increasing knowledge and willingness to vaccinate on human papillomavirus Among Women in barangay West Fairview, Quezon City

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## Abstract:

**BACKGROUND:** Cervical cancer, caused by human papillomavirus (HPV), is the second most common cancer among Filipino women. Despite vaccine availability, the Philippines has a low 60% immunization rate, driven by hesitancy and poor public awareness.

**AIMS AND OBJECTIVES:** This study assessed how 100 women (ages 18–45) in Quezon City understood HPV and their willingness to vaccinate.

**MATERIALS AND METHODS:** Researchers used a pre–post interventional study and purposive sampling and Cochran’s formula for size calculation. Participants completed a pretest, a Department of Health/World Health Organization/Centers for Disease Control and Prevention-based digital educational intervention, a posttest, and a satisfaction survey. Data were gathered confidentially under informed consent.

**RESULTS:** Results showed significant improvement in knowledge and willingness to vaccinate ( $P < 0.001$ ), with almost all respondents expressing willingness. The intervention received high satisfaction ratings, proving the digital tool was effective and well-received.

**CONCLUSION AND RECOMMENDATION:** In conclusion, this study demonstrated that a structured digital educational tool effectively bridges knowledge gaps and addresses vaccine hesitancy in a community setting. Findings emphasize the importance of targeted, community-level initiatives to reduce cervical cancer risk. Future research should include teens and males and use a larger randomized sample for definitive evidence.

## Keywords:

Cervical cancer, educational intervention, human papillomavirus, human papillomavirus awareness, vaccination, women

## Introduction

Human papillomavirus (HPV) remains a major global public health concern, serving as the leading cause of cervical cancer and other HPV-related diseases.<sup>[1,2]</sup> Among Filipino women, cervical cancer ranks as the second most common malignancy, accounting for an estimated 7,897 new cases

and 4,052 deaths annually.<sup>[3]</sup> Although global evidence demonstrates that HPV vaccines are highly effective (>93%) and significantly reduce HPV-related cancers,<sup>[4,5]</sup> vaccine uptake remains suboptimal – particularly in low- and middle-income countries where misinformation and vaccine hesitancy persist.

In the Philippines, HPV immunization coverage is among the lowest globally, with

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only 23% of individuals receiving the first dose and just 5% completing the full vaccination series – figures that fall far below the World Health Organization’s 90% target.<sup>[6]</sup> Knowledge and awareness levels are also alarmingly low; more than half of Filipino women report knowing little or nothing about HPV, and perceived personal risk remains minimal despite the high burden of cervical cancer.<sup>[7]</sup> Vaccine acceptance is frequently hindered by cost and mistrust, a situation exacerbated by the Dengvaxia controversy, which significantly eroded public confidence in vaccination programs.<sup>[8]</sup>

Globally, effective interventions have succeeded by reframing the public health message – shifting the focus from the vaccine’s association with sexual activity to its primary role as a cancer prevention measure.<sup>[9]</sup> Standardized educational tools, such as clear and accessible informational materials, have been shown to enhance health literacy effectively.<sup>[10]</sup> In the Philippines, particularly in urban settings like Quezon City, interventions must specifically address the dual barriers of cost and profound vaccine hesitancy rooted in past public health crises.<sup>[11]</sup>

One of the most effective strategies involves leveraging the influence of trusted healthcare providers (HCPs); a strong and consistent recommendation from a HCP has been shown to substantially increase vaccine acceptance.<sup>[12]</sup> Alongside targeted educational campaigns addressing knowledge gaps, empowering pharmacists presents a promising approach. Pharmacies – widely accessible in areas such as Quezon City – offer opportunities for trusted, opportunistic educational counseling. Pharmacists serve as essential “novel partners” whose expanded role is critical to overcoming access barriers and improving local vaccine uptake.<sup>[13]</sup>

The Department of Health (DOH) launched community- and school-based HPV vaccination programs in 2015 and 2017, respectively.<sup>[14]</sup> However, national coverage and public awareness remain insufficient.<sup>[6]</sup> Existing evidence indicates that educational interventions, particularly those led by pharmacists, can significantly enhance vaccine knowledge and acceptance.<sup>[9,10]</sup> Several studies have underscored the role of pharmacists in delivering accessible, community-based education that addresses cultural, informational, and economic barriers to vaccination.

Despite the growing global emphasis on HPV prevention, local evidence on pharmacist-led, community-based interventions aimed at improving HPV awareness and vaccination willingness remains limited. Adding the fact that with a stark contrast between the high efficacy of the HPV vaccine globally and the critically low uptake rates in the Philippines, particularly against the

backdrop of pervasive misinformation and historical public health mistrust, there is an urgent need for innovative, community-based solutions. While national public health programs have struggled to meet national targets, the potential of accessible and trusted HCPs such as pharmacists in urban areas like Quezon City remains underexplored as a vector for increasing health knowledge. This study addressed this gap by evaluating the effectiveness of a student pharmacist-developed digital educational tool in enhancing knowledge, awareness, and willingness to receive HPV vaccination among women in Barangay West Fairview, Quezon City. The study assessed participants’ sociodemographic profiles, baseline knowledge, awareness, and willingness; evaluated the impact of the intervention through pre- and posttest comparisons; explored associations between demographic factors and willingness; and conducted a follow-up assessment two weeks postintervention to determine changes in vaccination intention and attitudes toward HPV prevention.

This study’s findings are pivotal, as the crucial local evidence derived will underpin the development of new, scalable government health programs. Such information is essential to guide resource allocation and policy adjustments, ultimately improving the willingness, or best yet, uptake of HPV vaccination across a wider demographic.

## Materials and Methods

### Research design

The study used a pre–post interventional research design to evaluate the effectiveness of a digital educational tool, created by 3<sup>rd</sup>-year pharmacy students, in increasing knowledge and willingness to vaccinate against HPV. The tool was presented to the participants, and their knowledge was assessed before and after using it by administering questionnaires at both times.

### Sampling technique and sampling population

The sampling technique used in the study was purposive sampling, where the researchers collected data from readily accessible subjects with the assistance of the local barangay. The community leaders were responsible for inviting participants to the study. The sample size used was 100, calculated using Cochran’s formula, which is suitable for large populations and accounts for a desired confidence level and margin of error. Using a 95% confidence interval, a 5% margin of error, and an estimated population proportion of 0.5.

Cochran’s Formula:

$$n = \frac{Z^2 \times p \times (1 - p)}{e^2} = \frac{1.96^2 \times 0.5 \times (1 - 0.5)}{0.1^2} = 96.04 \approx 100$$

## Participants

A total of one hundred female participants were selected through purposive sampling. Participants were then screened to ensure eligibility, specifically that they were women aged 18–45 years old, could read and write, provided informed consent to participate in the study, and were willing to participate. Participants were not eligible to participate if they had a prior diagnosis of HPV-related cancer, had completed vaccination against HPV, or were diagnosed with cognitive impairments, such as Alzheimer's disease, etc., Participants were assured of confidentiality, and it was emphasized that their participation was entirely voluntary. Participants have the right to withdraw from the study at any time without penalty or explanation. They could notify the researcher personally or in writing, and their withdrawal had no bearing on their eligibility for further studies. In addition, the research team maintained the authority to exclude individuals for any number of reasons, including study discontinuation or concerns about their well-being. Any requested data removal was complied with upon withdrawal, and all relevant data was left out of the final analysis. There was no coercion to stay involved; all withdrawal decisions were honored.

## Research instrumentation development

The primary instruments used in this study were a digital educational tool and pre- and post-test questionnaires. The digital educational tool was an interactive visual presentation developed by 3<sup>rd</sup>-year pharmacy students. It incorporated information from credible sources, including the American Cancer Society, the Philippine DOH, Mayo Clinic, Flo Health, WebMD, CDC, WHO and the Cleveland Clinic.<sup>[15-17]</sup> A portion of the educational tool's slides used for the intervention is provided in Appendix I. The tool was intentionally designed to be easily comprehensible for individuals across various educational backgrounds.

The effectiveness of the digital educational tool was evaluated through the administration of identical questionnaires to the participants before and after its utilization. The questionnaires had multiple-choice and yes/no questions that were directly from the content of the digital educational tool. The preintervention survey included six questions with checkbox options to collect demographic information, five true-or-false questions to measure participants' awareness of HPV, and twenty multiple-choice items to assess their knowledge about HPV. The posttest contained nearly the same twenty questions as the pretest to evaluate knowledge retention. In addition, a satisfaction survey was conducted, consisting of five questions rated on a 1–5 scale to assess the overall effectiveness of the intervention. This was to determine whether the digital educational tool and the intervention were easy to understand, relevant, and culturally appropriate.<sup>[18]</sup>

## Research instrument validation

To ensure the effectiveness and appropriateness of the materials (pre- and posttest questionnaires and digital educational tools), they underwent expert and statistical validation. Five professionals were tediously selected based on their expertise and relevance to the study's target population, ensuring the materials' clarity and cultural stability. An obstetrician–gynecologist validated the accuracy of the HPV facts digital educational tool. A social worker affirmed its clarity and comprehensibility. At the same time, a midwife validated the relevance and consistency with public health education since their frontline role is to make sure that the material is culturally appropriate for locals, and practical to deliver. Finally, a Filipino language teacher tested its material for cultural sensitivity and grammatical precision, and a layperson checked its accessibility and intuitiveness for the target lay population. There were minor revisions from the expert feedback. It included simplifying medical terminologies, rephrasing statements to enhance clarity, and refining visual components. Ensuring that the materials remained accessible and engaging to the general audience, these revisions ensured methodological soundness.

To assess the digital educational tools and pre- and posttest questionnaires' content validity, Yusoff's<sup>[19]</sup> methodology was used with the help of 2 indices: the item-level content validity index (I-CVI) and the Scale-Level Content Validity Index-Average Calculation Method (S-CVI/Ave). The I-CVI measures the proportion of experts who rate a single item scale as highly relevant, while the S-CVI/Ave calculates the average of these I-CVI values across all items to assess the relevance of the entire scale. Five experts evaluated using a four-point scale to measure its relevance. All items achieved near-perfect scores, yielding an I-CVI of 1.00 and an overall S-CVI/Ave of 1.00, showing excellent content validity.

Before the actual implementation, a pilot study was conducted involving 15 participants. The results obtained from this preliminary testing were utilized to compute the Cronbach's alpha coefficient for both the pre- and post-test questionnaires to assess their internal consistency and reliability. A Cronbach's alpha value of 0.7 was recorded for both the pre- and post-test instruments, indicating acceptable reliability and a relatively high level of internal consistency.<sup>[20]</sup>

## Data collection procedure

Before the actual data collection, the researchers underwent training under the supervision of their research adviser and the community engagement committee head on the facilitation of the intervention.

They followed a script based on the educational tool, which served as their guide. The researchers also practiced the intervention beforehand to ensure a smooth and consistent implementation.

Data collection was carried out in Barangay West Fairview, Quezon City, with the assistance of local community leaders and the researchers' community engagement office. This relationship was critical for increasing access to the target group and fostering community trust. Before the data collection, all eligible female participants were informed about the study's aims, procedures, confidentiality measures, and the voluntary nature of their participation. Each participant provided written informed consent before participating in any data collection activities to ensure ethical compliance and participant autonomy.

The process was conducted in a multipurpose building in the barangay and followed a standardized, three-phase approach. Participants were divided into groups of five, each led by a single facilitator. Each session lasted about 30–45 min. The first phase included a pretest to determine baseline knowledge before being exposed to the digital teaching tool. The created digital instructional tool, which was shown on a tablet or screen, was used to carry out the educational intervention in small groups during the second phase. The researchers used a standardized script based on the educational material to achieve a seamless, consistent, and uniform delivery across all participant groups. The third phase included a posttest conducted immediately following the intervention to assess knowledge gained.

Following the posttest, participants filled out a satisfaction survey to rate the acceptability and perceived usefulness of the digital educational tool, as well as a survey to determine their willingness to obtain the HPV vaccine. A follow-up phone call was made two weeks after the intervention and lasted about two to three minutes. During the call, researchers asked participants if they were still willing to be vaccinated against HPV, detected any growing barriers to vaccination, and solicited preliminary input on how the educational session changed their vaccination decision. All responses were collected anonymously and securely stored to maintain participant confidentiality.

### Ethical considerations

The Institutional Ethics Review Committee of the university provided ethics approval for this project, with study protocol code: IERC 2025-0010. This was further reviewed and approved by the Data Protection Officer of the said institution.

### Data processing and analysis

Percentage analysis was employed to describe the distribution of demographic characteristics within the sample population. By calculating percentages, the researchers identified trends and patterns in the respondents' demographic profiles. In addition, the proportion of participants who expressed intent to be vaccinated after the 2-week follow-up was collected to provide a measure of actual vaccination intent among the study participants.

Mean scores were utilized to assess respondents' levels of knowledge, awareness, and willingness to receive vaccination. Comparisons of mean scores before and after the intervention enabled the researchers to evaluate the impact of the educational tool on participants' knowledge and attitudes.

The data normality was examined and found to meet the necessary assumptions. The effectiveness of the educational intervention was then assessed using a paired *t*-test, which compared knowledge, awareness, and willingness to vaccinate results from the pre- and post-test. Finally, Chi-square tests were used to examine associations between demographic variables and vaccination intent. This analysis helped identify specific demographic groups that were more or less receptive to vaccination, thereby informing the development of targeted intervention strategies.

## Results

A total of 100 female participants from Barangay West Fairview, Quezon City, aged between 18 and 45 years old, were included in the study, as shown in Table 1. The highest proportion of respondents fell within the 21–30 age group (23%), followed by the 31–40 age group (20%). Most participants had completed secondary education, were Roman Catholic, and were either married or single. The majority were unemployed and had between one to three children.

As of the knowledge assessment, participants showed a notable improvement in posttest scores compared to pretest results, as shown in Table 2. The average pretest score was 9.33, while the average posttest score rose to 13.07, indicating a marked improvement in HPV-related knowledge following the intervention.

The results reflect overwhelmingly positive attitudes toward HPV vaccination, as shown in Table 3.1. All respondents (100%) agreed that the HPV vaccine is important, and a substantial majority (98%) indicated they would recommend it to others. These findings highlight a strong level of awareness and social endorsement of HPV vaccination within the community.

**Table 1: Demographic profile of the respondents (n=100)**

| Variables              | Category             | Frequency, n (%) |
|------------------------|----------------------|------------------|
| Age (years old)        | Less than and 20     | 10 (10)          |
|                        | 21–30                | 23 (23)          |
|                        | 31–40                | 20 (20)          |
|                        | 41–45                | 14 (14)          |
| Educational attainment | Elementary           | 10 (10)          |
|                        | Secondary            | 58 (58)          |
|                        | College              | 31 (31)          |
| Religion               | Roman catholic       | 92 (92)          |
|                        | Islam                | 1 (1)            |
|                        | Iglesia Ni Cristo    | 1 (1)            |
|                        | Ang dating Daan      | 1 (1)            |
|                        | Born again Christian | 5 (5)            |
| Marital status         | Single               | 33 (33)          |
|                        | Married              | 38 (38)          |
|                        | Separated            | 7 (7)            |
|                        | Widowed              | 8 (8)            |
|                        | Live-in              | 13 (13)          |
| Employment status      | Employed             | 24 (24)          |
|                        | Unemployed           | 57 (57)          |
|                        | Student              | 19 (19)          |
| Number of children     | None                 | 31 (31)          |
|                        | 1–3                  | 53 (53)          |
|                        | 4–7                  | 15 (15)          |
|                        | 8 or more            | 1 (1)            |

**Table 2: Pre- and posttest mean scores on the knowledge of women aged 18–45 in Barangay West Fairview, Quezon City, about human papillomavirus**

| Score range   | Pretest, frequency | Posttest, frequency |
|---------------|--------------------|---------------------|
| 0–5           | 11                 | -                   |
| 6–10          | 49                 | 22                  |
| 11–15         | 38                 | 54                  |
| 16–20         | 2                  | 24                  |
| Mean±SD       | 9.33±2.92          | 13.07±2.94          |
| Minimum score | 2                  | 6                   |
| Maximum score | 17                 | 20                  |

SD: Standard deviation

**Table 3.1: Acceptability of the respondents towards vaccination**

|                                                      | Yes, frequency | No, frequency |
|------------------------------------------------------|----------------|---------------|
| Do you think the HPV vaccine is important?           | 100            | -             |
| Would you recommend the HPV vaccine to other people? | 98             | 2             |

HPV: Human papillomavirus

The results reveal a high level of willingness, with 67% of respondents strongly agreeing and 22% agreeing that they would get vaccinated after the program, as shown in Table 3.2. Only a small minority were neutral (5%) or expressed disagreement (6% combined). The calculated mean of 4.47 indicated a response leaning toward “strongly agree,” and the overall interpretation confirms that the respondents were highly willing to receive the HPV vaccine.

The mean score increased from 9.33 (pretest) to 13.07 (posttest), indicating an improvement in knowledge after the intervention. A *t*-value of  $-12.078$  and  $P < 0.001$ , as shown in Table 4, confirm that this difference is statistically significant at the 1% level, leading to the rejection of the null hypothesis ( $H_0$ ), which states that there is no significant difference between pre- and posttest scores.

The results indicate that none of the variables, such as age ( $P = 0.482$ ), educational attainment ( $P = 0.947$ ), religion ( $P = 0.341$ ), marital status ( $P = 0.076$ ), and employment status ( $P = 0.330$ ), show a significant relationship with willingness to be vaccinated, as illustrated by Table 5. All *P* values are greater than the commonly used significance level of 0.05, leading to the acceptance of the null  $H_0$  in each case.

Furthermore, the study found that sociodemographic factors such as age, educational attainment, religion, marital status, and employment status did not significantly influence respondents’ willingness to get vaccinated. This suggests that the educational intervention had a broad impact, effectively influencing attitudes across different population groups.

The results show consistently high mean scores across all assessed aspects, as shown in Table 6. The highest level of agreement was recorded in the area relating to overall knowledge improvement, with a mean of 4.88 and a standard deviation of 0.50, suggesting a strong consensus. The helpfulness of the materials received a mean score of 4.80, while clarity and ease of understanding of the information followed closely at 4.77. The component related to the influence of the program on health decision-making reflected a mean of 4.74, and the general increase in awareness was rated at 4.66. With an overall mean of 4.77, it is evident that the intervention was highly effective and well-received by participants.

A follow-up call was conducted after 2 weeks. Results show the majority (54%) of the respondents have a plan to get vaccinated, while 12% of respondents do not have a plan to get vaccinated, as shown in Table 7, followed by 22% of respondents who were unable to contact or failed to answer. Finally, the rest of the respondents did not indicate any contact information (12%).

## Discussion

The findings of this study underscore the critical role of educational interventions in addressing the low level of HPV awareness among women in Barangay West Fairview, Quezon City. However, Pearson Chi-square tests examining correlations between sociodemographic

**Table 3.2: Willingness of the respondents towards vaccination**

| Will you be getting the vaccine against HPV after this program? | Frequency | Mean | Interpretation |
|-----------------------------------------------------------------|-----------|------|----------------|
| Strongly agree                                                  | 67        | 4.47 | Strongly agree |
| Agree                                                           | 22        |      |                |
| Neutral                                                         | 5         |      |                |
| Disagree                                                        | 3         |      |                |
| Strongly disagree                                               | 3         |      |                |

4.21–5.00: Strongly agree, 3.41–4.20: Agree, 2.61–3.40: Neutral, 1.81–2.60: Disagree 1.00–1.80: Strongly disagree. HPV: Human papillomavirus

**Table 4: Significant differences between the pre and post-test on the effectiveness of the digital educational tool**

|          | Mean  | t       | P      | Significance      | Decision  |
|----------|-------|---------|--------|-------------------|-----------|
| Pretest  | 9.33  | -12.078 | <0.001 | Significant at 1% | Reject Ho |
| Posttest | 13.07 |         |        |                   |           |

Ho: There is no significant difference between pre- and posttest

**Table 5: Association of demographic profiles and willingness to be vaccinated**

| Profile           | Pearson Chi-square | P     | Significance    | Decision  |
|-------------------|--------------------|-------|-----------------|-----------|
| Age               | 120.015            | 0.482 | Not significant | Accept Ho |
| Education         | 17.089             | 0.947 | Not significant | Accept Ho |
| Religion          | 26.250             | 0.341 | Not significant | Accept Ho |
| Marital status    | 44.050             | 0.076 | Not significant | Accept Ho |
| Employment status | 9.152              | 0.330 | Not significant | Accept Ho |

**Table 6: Respondent's satisfaction with the human papillomavirus educational intervention**

|                                                                       | Mean±SD   | Interpretation |
|-----------------------------------------------------------------------|-----------|----------------|
| My knowledge about HPV has improved                                   | 4.66±0.70 | Strongly agree |
| The HPV-related material was very helpful                             | 4.80±0.64 | Strongly agree |
| The information in the educational tool was clear and understandable  | 4.77±0.63 | Strongly agree |
| The program helped with my knowledge of HPV                           | 4.88±0.50 | Strongly agree |
| The intervention was effective in encouraging vaccination against HPV | 4.74±0.58 | Strongly agree |
| Overall mean                                                          | 4.77      | Strongly agree |

4.21–5.00: Strongly agree, 3.41–4.20: Agree, 2.61–3.40: Neutral, 1.81–2.60: Disagree 1.00–1.80: Strongly disagree. HPV: Human papillomavirus, SD: Standard deviation

**Table 7: Follow-up call results**

|                                        | Number of respondents/ percentage |
|----------------------------------------|-----------------------------------|
| Plan to get vaccinated                 | 54                                |
| Does not have a plan to get vaccinated | 12                                |
| Unable to contact                      | 22                                |
| No contact information                 | 12                                |

factors – such as age, educational attainment, religion, marital status, and employment status – and willingness to vaccinate revealed no significant associations. This suggests that the decision to receive the HPV vaccine was influenced more by the educational intervention

than by demographic characteristics. The results of this study show the significance of health education in molding individuals' attitudes toward vaccination. These results match those observed in earlier studies, demonstrating that educational interventions can significantly improve HPV vaccine acceptance regardless of sociodemographic factors.<sup>[10,21,22]</sup> Hence, findings highlight the importance of responsive health education in effectively increasing vaccination rates across diverse population groups.

The majority of participants are aware of medical procedures, such as the Pap smear, through free community health programs. However, most participants had no knowledge of the association of HPV and cervical cancer. For several participants, it was their first time being made aware of cervical cancer due to the study, revealing a substantial gap in health literacy.

Despite the increasing incidence of cervical cancer, public knowledge about HPV remains low due to the lack of awareness, reflecting the broader context in the Philippines. Lack of employment and limited job opportunities have played a hand in hindering individuals' access to reliable health information and healthcare services.<sup>[23]</sup> These materials should address the community's health and social needs directly. These insights reflect studies that highlight the need to modify educational resources. This modification helps improve access to care and supports women in making informed decisions about HPV.<sup>[24]</sup>

The postintervention results showed that participants had a much better understanding of HPV and related health issues. This indicates that the digital educational tool used in the study was effective. It not only raised awareness but also became a useful resource for improving public health in communities with limited access to care. These observations align with preceding research that suggests that greater acceptance and positive belief with vaccination are due to educational interventions' effectiveness in raising knowledge and awareness.<sup>[10]</sup>

The findings, along with the overall positive feedback regarding the vaccine, suggest that the intervention has a positive impact. HPV knowledge among women following the intervention demonstrated a significant improvement, accompanied by high satisfaction levels among participants, indicating the effectiveness of the intervention. In addition, confirming that sociodemographic factors did not influence willingness, but knowledge and awareness of HPV encouraged vaccination uptake.

Nonetheless, there were a few participants who remained hesitant about getting vaccinated, potentially due to evolving personal beliefs, economic constraints,

cultural considerations, wariness toward vaccines or the HCPs, or simply a lack of access to vaccination and medical services.<sup>[13]</sup>

There were a few challenges in the study that are important to mention. Since it was done in just one barangay, the result might not represent the experiences of other communities in the country. Though the session was held in a multipurpose building, there were open gates and windows, and background noise sometimes distracted participants. The brief interval between the pre- and post-test topics could not be fully discussed. It was difficult to grasp the concept of HPV. Longer sessions could have improved their understanding of the concepts covered. Moreover, despite the majority of the respondents who plan to get vaccinated, the remaining respondents were unable to be contacted, therefore leaving the question if they ever plan to get vaccinated in the future. As to those who did confirm they were not getting vaccinated, the high prices of vaccines and schedule conflicts could be factors.<sup>[25]</sup>

In practical terms, the results highlight the importance of accessible and affordable vaccination against HPV. Public health practitioners can use these results to design more targeted educational interventions, possibly in other diseases, focusing on rural areas and minorities, especially in the province. Improvement of future health interventions and adapting to new techniques in education for a better understanding of the masses. Hence, implementation of similar educational interventions provides a positive outcome to the community and to policymakers.

In conclusion, the study highlighted the effectiveness of educational intervention in improving HPV knowledge, increasing vaccine acceptability, and enhancing willingness to vaccinate. The statistically significant improvements in knowledge, coupled with high levels of vaccine acceptability and willingness, reflect the positive impact of the intervention. In addition, the lack of significant correlations between sociodemographic factors and willingness to vaccinate suggests that educational programs can have a broad-reaching effect regardless of respondents' demographic backgrounds.

## Conclusions

The findings of the research illustrate that the educational intervention successfully raised participants' knowledge of HPV. The sessions not only increased participants' comprehension of HPV and its health implications but also helped modify their perspectives toward the HPV vaccine, shifting from uncertainty to willingness. This demonstrates the effectiveness of education in raising awareness and influencing views. The shift was reflected in participants' willingness to recommend it to other people

and indicating plans to get the vaccination themselves. The results showed that the demographic profile did not have any influence in respondents' willingness to get vaccinated. In addition, results underscore the power of targeted education in raising the importance of personal responsibility and preventive health actions.

The intervention was deemed highly satisfactory by the participants. The participants were especially pleased with the efficiency, relevance, and clarity of the information. These results illustrate that the strategy effectively enhanced participants' awareness of HPV vaccination and encouraged them to consider getting vaccinated.

The research's significance lies in its initial focus on enabling educational interventions to raise understanding of HPV, despite several limitations. To enhance the impact of such initiatives, future researchers are encouraged to extend the duration of intervention sessions, involve a broader range of participants, and compare various health education strategies. The HPV does not only affect women in a certain age group but men too; future studies should also consider other genders as well as age groups, especially in adolescence. A more effective way to contact respondents for the follow-up call is recommended, such as using a multimodal strategy using scheduled SMS/messaging app reminders or Barangay Health Worker home visits to address limited digital access and have a more trusted touchpoint. Furthermore, government collaboration, especially in rural areas, should be considered for an effective and widespread approach.

This study has shown how essential it is to educate young women about the HPV vaccine. Information specifically designed to address questions and concerns from daily life has the power to change perspectives and empower individuals to make informed health decisions.

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## Conflicts of interest

There are no conflicts of interest.

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## Appendix

### I. Educational tool

