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Educational intervention on the human papillomavirus and quality of information

Intervención educativa sobre el papiloma virus humano y calidad de información

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Abstract

The human papillomavirus is a common sexually transmitted infection, widely spread worldwide, it is considered the main agent for the development of cervical cancer. With the aim of improving information on human papillomavirus infection in women over 20 years of age, a quasi-experimental educational intervention study was carried out in office 3 of the Previsora Polyclinic between January 2023 and April 2024. The universe was made up of 310 women, a sample of 115 was selected, who met the inclusion criteria. The variables that were analyzed were, age, school level, knowledge about the human papillomavirus, risk factors, manifestations and prevention. The survey was used before and after the intervention. The study was carried out in 3 phases: diagnostic, interventional and an evaluative phase. To evaluate the effectiveness of the educational intervention, the McNemar test was used. It was observed that 44.3% of the participants were between 20-29 years old and more than half of them had a pre-university school level. Before the educational intervention, an inadequate level of information on aspects of human papillomavirus infection predominated, and in general a low cognitive level, then with the intervention it was possible to raise the level of information. The intervention was effective in modifying knowledge through participatory didactic resources that could be applied in daily medical practice.

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Resumen

El virus del papiloma humano es una infección de transmisión sexual común, ampliamente difundido a nivel mundial, se le considera como el principal agente para el desarrollo del cáncer cervicouterino. Con el objetivo de mejorar la información sobre la infección por el virus papiloma humano en mujeres mayores de 20 años, se realizó un estudio cuasi experimental de intervención educativa en el consultorio 3 del Policlínico Previsora entre enero de 2023 y abril de 2024. El universo estuvo constituido por 310 mujeres, se seleccionó una muestra de 115, que cumplieron los criterios de inclusión. Las variables que se analizaron fueron, edad, nivel escolar, conocimiento sobre el papiloma virus humano, los factores de riesgo, las manifestaciones y la prevención. Se empleó la encuesta antes y después de la intervención. El estudio se realizó en 3 fases: diagnóstica, de intervención y una fase evaluativa. Para evaluar la eficacia de la intervención educativa se empleó la prueba de McNemar. Se observó, 44.3 % de las participantes tenían de 20-29 años y más de la mitad nivel escolar preuniversitario. Antes de la intervención educativa predominó un inadecuado nivel de información sobre aspectos de la infección por el papiloma virus humano y de forma general el nivel cognitivo bajo, luego con la intervención se logró elevar el nivel de información. La intervención fue eficaz al modificar conocimientos mediante recursos didácticos participativos y factibles de aplicar en la práctica médica diaria.

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Introduction

Infection caused by the human papillomavirus (HPV) has increased exponentially in recent decades, becoming considered a serious public health problem that mainly affects groups of adolescents and young women, which conditions the appearance of precursor lesions and cervical cancer^{1,2}.

HPV is a DNA virus that belongs to the *Papillomaviridae* family. It is generally transmitted sexually, but it is also possible to contract it vertically from mother to child, by contact with the cervical mucosa during childbirth, transplacentally and, less frequently, by horizontal transmission during childhood³⁻⁶.

The International Human Papillomavirus Reference Center of the Karolinska Institute reports until 2021, the identification of 228 different types of HPV, it is estimated that about 40 can be found in the genital and anal area with the capacity to generate cancer⁷.

The clinical form of genital HPV infection is variable, and can range from asymptomatic states with spontaneous resolution to the presentation of cancerous processes⁸. The most common preneoplastic and neoplastic lesions associated with HPV are found in the cervix and, secondly, in the oral mucosa⁹.

HPV infection is the most common sexually transmitted viral disease and the leading cause of gynaecological consultation. It is considered that every sexually active individual will be exposed to this pathogen at some point in their lives⁵.

The increasingly early onset of sexual activity in the female population, as well as the lack of knowledge about the consequences of infection,

tip the balance towards adolescents acquiring sexually transmitted infections such as HPV, with published data showing a range of infection prevalence of 30 to 60 % in women between 15 and 25 years of age¹⁰.

Studies around the world show that knowledge about HPV is low, with 37 % of respondents in the United States, 51 % in the United Kingdom, 10 % in Brazil, 34 % in Iceland, and 68 % in South Africa citing it as a risk factor for developing cervical cancer¹¹.

In the United States of America, approximately 79 million people are infected and 14 million are newly infected with the virus each year, making it a public health problem¹².

The prevalence of HPV in Mexico is 91 % and in Spain 2 million women are infected with the virus, which represents 14 % of the female population, and cases of infection are increasing among those under 25 years of age^{10,13}.

HPV is considered a public health problem due to the high rates of morbidity and mortality worldwide¹⁴. In Cuba, a study in 2017 shows that the prevalence rate of HPV is between 10 and 12 %¹². Ignorance about HPV can act as an important risk factor for acquiring the infection. It is known that, for effective prevention, it is essential to provide the vulnerable population with information on the main aspects of HPV infection and its consequences, because most women do not know that it is the main cause of cervical cancer and that it is related to cancer of the vulva, vagina and anus in women. or cancer of the anus and penis in men.

Based on the above, the objective of this research

was to improve the quality of information on HPV infection in a group of women over 20 years of age belonging to clinic 3 of the Previsora Polyclinic between January 2023 and April 2024.

Materials and methods

A quasi-experimental study of educational intervention was carried out in clinic 3 belonging to the Previsora Polyclinic of the municipality of Camagüey in the period between January 2023 and April 2024 with the aim of improving the quality of information on HPV infection in women over 20 years of age.

The study universe was made up of 310 women between the ages of 20 and 50 years belonging to the medical office and the sample of 115 was selected through intentional non-probabilistic sampling, to which the survey approved by the Scientific Council was applied.

Inclusion criteria. i) Women aged 20 years or older and under 50 years of age. ii) Women who agreed to participate voluntarily in the study through informed consent. (iii) Women who are mentally capable of assimilating the educational programme.

Exclusion criteria. i) Women who did not attend the scheduled meetings. ii) Women who did not agree to participate in the research. iii) Women under 20 years of age and over 50 years of age.

In the preparation of this research, the different methods of the research were applied: theoretical, statistical and empirical. This study was carried out in 3 stages of work, divided as follows: diagnostic,

intervention and evaluation.

A qualitative rating of knowledge on each aspect was established as adequate or inadequate. The variables that were analyzed were age, school level, information on HPV, risk factors, manifestations and prevention.

To test the efficacy of the educational intervention, a non-parametric test for comparing proportions, the McNemar test, was used¹⁵.

In the development of this research, informed consent was requested and it was maintained as a premise to respect the bioethical and normative principles of the Declaration of Helsinki¹⁶, the results were used only for research purposes.

Results

Table 1 Distribution of participants according to age

Age groups (Years)	No.	%
20 - 29	51	44.3
30 - 39	35	30.5
40 - 49	29	25.2
Total	115	100.0

Table 2 Participants by level of education

Schooling	No.	%
Primary	0	0
High school	34	29.6
Pre-university	65	56.5
University	16	13.9
Total	115	100.0

Table 3 Quality of information on the human papillomavirus

Quality of Information	Antes		Después	
	No.	%	No.	%
Inadequate	92	80	9	7.8
Adequate	23	20	106	92.2
Total	115	100	115	100

A significant value was obtained in the McNemar X² test for a degree of freedom, ($p < 0.05$) which validates the quality of information achieved by the participants who received the intervention.

La

The McNemar test validated the improvement in the quality of information with respect to the initial state that was achieved with the application of the educational program. (Table 4)

Table 4 Quality level of information on the factors that favor infection by human papillomavirus

Quality of information	Antes		Después	
	No.	%	No.	%
Inadequate	100	86.9	11	9.6
Adequate	15	13	104	90.4
Total	115	100	115	100

Table 5 Quality of information on the manifestations of human papillomavirus infection

Quality of information	Antes		Después	
	No.	%	No.	%
Inadequate	104	90.4	13	11.3
Adequate	11	9.6	102	88.7
Total	115	100	115	100

A significant value was obtained in the McNemar test for a degree of freedom, ($p < 0.05$) which validates the favorable modification of the quality of information in this aspect achieved by the participants.

Table 6 Quality of information on the prevention of human papillomavirus infection

Calidad de información	Antes		Después	
	No.	%	No.	%
Inadecuada	96	83.5	8	6.9
Adecuada	19	16.5	107	93.1
Total	115	100	115	100

A significant McNemar value was obtained for a degree of freedom, which validated the quality of information achieved by the participants.

When applying the McNemar test, a significant value ($p < 0.05$) was obtained, which validated the quality of information that the participants achieved after receiving the intervention. (Table 7)

Table 7 Overall assessment of the quality of information on the human papillomavirus

Quality of information	Antes		Después	
	No.	%	No.	%
Low	88	76.5	14	12.18
High	27	23.5	101	87.82
Total	115	100	115	100

Discussion

HPV infection is considered the most common sexually transmitted infection, especially affecting young women and men, and its incidence is directly related to sexual activity⁸.

In the present study, women in the 20 to 29 age group predominated, similar to that reported by Bustamante-Ramos *et al.*¹⁷ who indicated that the average age of the participants was 22 years. Similarly, Mesias Marqui¹⁸ in Peru reported that the age of the majority ranged from 20 to 29 years, coinciding with Araujo Ogozi¹⁹.

Córdova Samplini²⁰ pointed out that most of the participants were women between the ages of 30 and 35. Similarly, Torres Aguilar²¹ observed an average age of 31 years in 120 women who attended a gynecology outpatient clinic in a hospital in Peru. In the present research, before the intervention, women were unaware of the definition of HPV, and then their quality of information improved, which coincides with studies carried out by Pari López *et al.*²². Similarly, Pautrat Robles *et al.*²³

When evaluating the quality of information about HPV, they reported that two-thirds of the participants improved the quality of information in the posttest.

Torres Aguilar²¹ surveyed 120 women, and observed that more than half answered correctly that HPV infection is a sexually transmitted disease and that it is transmitted through sexual intercourse, which differs from the present study where more than half of the women did not have information about the routes of transmission of HPV infection. The most consistent risk factor for HPV infection is the increased number of sexual partners. Other factors that increase the risk of cervical cancer have also been described, including smoking, immunosuppression, misuse of barrier methods, sexual promiscuity, and lack of adherence to screening programs²⁴.

The result of this research is similar to that reported by Pari López et al.²² who, when determining the influence of an educational intervention on the quality of information on the risk factors for acquiring HPV, observed that before the intervention the low level of information predominated and then the high level prevailed.

In Lima, a study conducted by Lizarbe Pujaco²⁵ observed that most students do not know about HPV risk factors. Ayora Apolo & Guzmán Cruz²⁶ pointed out the importance of risk factors for developing the disease.

Having the necessary information about HPV is a factor that generates behavioral attitudes that result in a change in terms of risk prevention, so provid-

ing information is essential.

Regarding information on HPV risk behaviors, Torres Aguilar's research²¹ observed that two-thirds correctly answered that having sex at an early age and having multiple sexual partners are risk behaviors for contracting HPV.

Mesías Marqui¹⁸ pointed out that they recognized that one of the manifestations is the appearance of warts in the vagina, anus, and that the virus causes cancer. Bustamante-Ramos et al.¹⁷ in their work reported that respondents were not informed about the main clinical manifestations.

When analyzing the results obtained, on whether they have information about the clinical presentation of HPV, Torres Aguilar²¹ stated that only a quarter answered correctly and that warts on the genitals are a clinical manifestation, while the majority answered correctly that HPV is the cause of cervical cancer.

In the survey carried out before the educational intervention, it was found that more than 90 % of the women did not have information on the clinical manifestations of HPV, at the end of the study almost all the women acquired information on the subject.

The result of this research is similar to that of Pari López et al.²² who determined the influence of an educational intervention on the level of information about HPV, noting that before the intervention the lack of information on prevention measures such as sexual abstinence, vaccination, having only one sexual partner and condom use predominated, and after the intervention a high

prevailed.

The research of Pautrat Robles *et al.*²³ reported that deficiencies prevailed over prevention in both the pre-test and post-test. This result differs from the one found in the present study, where the intervention significantly improved the level of information on this aspect and thus contributed to fewer and fewer people getting sick with HPV.

Regarding prevention measures, Lizarbe Pujaco²⁵ pointed out that most of the casuistry knows about prevention measures, such as: using condoms, having only one sexual partner, and vaccination, which are important aspects to avoid acquiring HPV.

As preventive measures, it is recommended to educate from an early age about sexuality and HPV infection, as well as to promote the use of vaccines, condoms and cytology for patients with suspected HPV who have an active and early sexual life¹⁰.

Frizzo Burlamaqui *et al.*²⁷ stated that one of the barriers to the implementation of prevention programs against HPV disease is the lack of information that most populations have about the virus and its possible consequences.

The impact of HPV education intervention on women is broad and multidimensional, not only affecting women's individual health, but also having multiplier effects on the community and society as a whole.

At the end of the educational intervention, it was possible to improve the quality of information for women about HPV and thus emphasize that the

study, learning and implementation of interventions in populations that are considered at risk should continue to be promoted, due to the current increase in sexually transmitted diseases.

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No funding was required to conduct the research.

Conflicts of interest

The authors declare that there are no conflicts of interest.

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Ethical considerations

The study guaranteed respect for the privacy and confidentiality of the information obtained.

Limitations in the research

There were no limitations when conducting the research.

Authors' contribution to the article

Ramón Álvarez López, conceptualization and ideas, data curation, research, methodology, project management, resources, supervision, writing of the orig-

inal draft. Writing, revision and final editing. *Reixander Francés Cruz*, conceptualization and ideas, research, supervision, writing of the original draft, writing, revision and final editing. *Maryelis Esquivel González*, conceptualization and ideas, research, supervision, writing of the original draft, writing, revision and final editing. *Cynara Mirón Folgoso*, conceptualization and ideas, research, writing of the original draft, writing and final editing. *Suremy Delgado Arribas*, conceptualization and ideas, research, writing of the original draft, writing and final editing.

Permissions for publication

The work was previously approved by the scientific committee of the Faculty of Medical Sciences before being submitted to this journal. The authors after a thorough review of the paper, have decided to proceed with the publication.

Access to data

The data and information of this research are present in the article.

Use of artificial intelligence

We assume that the entire document was written based on ethical and professional criteria, and AI was not used to make the images or text.

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