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ORIGINAL ARTICLE

HPV vaccine coverage among adolescents related to women with cervical cancer

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Uterine cervical neoplasms, Papillomavirus infections, Vaccination coverage.

Abstract

Purpose: To evaluate the HPV vaccine coverage in adolescents and young adults relatives of women with cervical cancer. **Method:** A Prospective study held in the oncology department at a tertiary referral Hospital, using an adapted form. **Results:** Epidemiological data were collected from 102 women with CC and 59 family members between 9-21 years. The degree of kinship between these young woman and cancer patients treated at the Hospital in the study was daughter (56%), sister (3%), niece (22%) and granddaughter (19%). Most of these girls (81%) were instructed to carry out HPV prevention, with the school (39%) being the main responsible for promoting vaccination. Regarding the reasons for not performing the immunization, the lack of information about the vaccine was the most mentioned (63%). When asking the girls relatives if they would vaccinate their daughters, 17% said they would not and none of these relatives knew the function of the vaccine. **Conclusion:** despite advances in HPV vaccination programs, there is still a great deal of misinformation about the topic in the population, especially among family members of the target audience. The school was identified as the protagonist in access to information and can be used as a means of access to the vaccine for young women and information for their families.

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INTRODUCTION

The social and economic transformations occurred in recent decades have caused an important change in the epidemiological profile of the Brazilian population, making chronic non-communicable diseases a serious public health issue. Among these conditions, cancer plays an important role because of its high prevalence, morbidity, and mortality[1-3].

With 560,000 new cases annually, cervical cancer is the fourth most common type of cancer among women worldwide. In some low- and middle-income countries, cervical cancer ranks second in the prevalence of malignant neoplasms affecting the female population. In this context, the North and Northeast regions of Brazil stand out with higher incidence and mortality. In higher income countries, both incidence and mortality associated with cervical cancer have decreased in the last 40 years, with reasons ranging from effective screening and early diagnosis to timely and appropriate treatment[4-6].

Cervical cancer has been associated with persistent infection by oncogenic subtypes of the human papillomavirus (HPV), especially HPV-16 and HPV-18, which account for about 70% of the cases of cervical cancer. Approximately 290 million women on the planet carry the virus and 80% of sexually active women are expected to acquire HPV over their lifetime[7-9].

In May 2018, the WHO made a global call for the elimination of cervical cancer. Strategies to achieve the eradication of the disease include vaccination, screening, and treatment of precancerous lesions. Specific goals are being discussed worldwide, such as immunizing 90% of the girls under the age of 15 and screening 70% of the women aged 35-45 years at least once in their lifetime[9-11].

The natural history of cervical cancer allows the early detection of precancerous lesions and their timely treatment. The incidence and mortality of this condition can be decreased with periodic screening, with cytology tests standing out as the main method of detection[12,13].

The recommendation of preferentially screening women between 25 and 65 years of age with Pap smears makes a great deal of sense, since peak incidence and mortality of the disease occur between the ages of 35 and 55 years. In the last 20 years, Brazil has advanced in the recognition of primary care as a key element in improving the population's overall health. Prevention has gained the spotlight, and tools such as screening and immunization have been increasingly used to fight diseases and their complications[14,15].

Immunization is a form of primary prevention against HPV subtypes associated with cervical cancer and genital warts., Today, 129 countries offer the quadrivalent HPV (4vHPV) vaccine in their immunization program[8,9]. In 2014, the 4vHPV vaccine (which offers protection against subtypes 6, 11, 16, and 18) was introduced in the immunization schedule of the Brazilian National Immunization Program, with a gradual expansion of the age range. It is currently offered to girls from the age of nine years and boys from the age of 11 years. The vaccine is offered free of charge to individuals of both sexes aged up to 14 years, 11 months, and 29 days by the Brazilian Unified Healthcare System (SUS)[16,17].

Vaccination has become the first prophylactic measure against cervical cancer. Although it is safe and effective, acceptance of the HPV vaccine has been lower than expected, with coverage in Brazil reaching 50%, still far from the 90% target coverage[18,19].

Studies performed in several countries have listed reasons for the low acceptance of the vaccine. Further studies are needed to look into the reality of the various regions of Brazil and understand the reasons low vaccine adherence. Unfortunately, despite numerous attempts made by Government to decrease the number of patients diagnosed with cervical cancer, Brazil has followed a path contrary to that seen in developed countries, with lower vaccination coverage in recent years and more cases of advanced disease. Availability of vaccines free of charge has not been enough to change this scenario.

Probing into immunization against HPV among young female relatives of patients diagnosed with cervical cancer gains additional relevance, as it sheds light onto the vaccination status of these young women and the factors influencing adherence to HPV vaccination programs.

METHODS

This prospective cross-sectional study with an analytical component was carried out from November 2019 to October 2020. A total of 102 women aged 18 years or older diagnosed with cervical cancer based on histology, cytology or immunohistochemistry tests and 59 of their relatives aged 9-21 years were included (Table 1). Cancer patients aged less than 18 years or who had trouble understanding and answering the questionnaire were excluded.

The study was conducted in the oncology department of a tertiary referral hospital in cervical cancer treatment. The authors conducted structured interviews with study participants between March 2020 and October 2020. The questionnaire used in the interviews was adapted from an existing form and variables about knowledge of HPV and the vaccine among cancer patients seen at a tertiary referral hospital were assessed. In addition, patient relatives were asked about their HPV vaccination status, number of shots, how they learned about the vaccine, reasons for not being immunized, occurrence of adverse reactions, and whether having a case of cervical cancer in their family encouraged them to talk about and seek immunization.

The collected information was gathered in an Excel spreadsheet. Software package Knime version 4.2.1 was used in statistical calculations. The categories were presented as simple frequencies (proportions). The Ethics Committee of the institution approved the study and issued certificate no. 26433319.1.0000.5201. The authors had no conflicts of interest to declare.

Table 1. Information about family members aged 9 to 21 years of cervical cancer patients treated at a Tertiary Hospital.

Variável	n	%
Total	59	100.0
Age range (years)		
9 a 15	32	54
16 a 21	27	46
Kinship		
Daughter	33	56
Sister	2	3
Niece	13	22
Granddaughter	11	19
Instructed to seek immunization against HPV		
Yes	51	86
Não	8	14
Immunized against HPV		
Yes	49	83
No	10	17
Diagnosis of a relative with cervical cancer affected the decision to seek immunization		
Yes	39	66
No	18	31
Did not answer	2	3
Diagnosis of a relative with cervical cancer increased conversations about the HPV vaccine		
Yes	42	71
No	17	29
Total	51	100.0
Information about vaccination obtained from:		
Local clinic	14	27
Pediatrician	0	0
School	20	39
Television	7	14
Internet	2	4
Other source	8	16
Total	49	100.0
Did you have an adverse reaction to the vaccine?		
Yes	4	8
No	44	90
Did not answer	1	2
Total	2	100.0
Reason for not being immunized against HPV		
Not instructed to do so	5	63
Fear of adverse reaction	0	0
Fear	0	0
Other reasons	3	37

All participants signed an Informed Consent Form.

RESULTS

We interviewed 102 patients diagnosed with cervical cancer seen at the oncology outpatient clinic of a referral hospital in northeastern Brazil. Fifty-nine patients had relatives aged 9-21 years.

The patients were asked about their knowledge of HPV, and most of them (60%) said they had some information about the virus, while 82% claimed they had heard about the vaccine. Television (44%) was named the venue through which most of them heard about the vaccine, followed by healthcare staff from the local clinics they attended (12.5%). More than half (57%) of the patients knew the age of the population targeted by the HPV immunization program, but half of them did not know what the vaccine could do for them. When asked if they would have their relatives immunized, 83% said yes. The 17% who said no did not know what the vaccine was for.

The young women aged 9-21 years included in the study were the daughters (56%), sisters (3%), nieces (22%), or granddaughters (19%) of the patients. Most of them had been instructed to seek HPV immunization (86%), with schools (39%) and local clinics (27%) standing out as the main proponents of vaccination. The majority (83%) of the young women took the HPV shots after they were advised to do so, while none of the young women not instructed to take the shot (14%) was immunized. Regarding the presence of adverse reactions to the vaccine, 8% of the immunized young women said they had fever after immunization. Lack of information about the vaccine was the most cited (63%) reason not to be immunized. Another relevant piece of information is that conversations about the importance of HPV immunization increased in 69% of the households after a family member was diagnosed with cervical cancer.

DISCUSSION

The underlying assumption of the study was that knowledge about HPV was lower than expected among patients and the vaccination target audience, resulting in low vaccination adherence among young women. Various reasons for this issue were considered in areas such as access to information about vaccination and the role of vaccines, as well as the main venues through which young women and their families had access to knowledge about HPV. In this study, participants were asked how much the decision to seek immunization might be affected by having a relative diagnosed with cervical cancer.

Less than half of the patients included in the study were aware of the existence of the HPV vaccine. Most said they had knowledge about the virus. We could not find studies in the literature correlating knowledge about HPV and the existence of a vaccine against it. However, Osis et al.[19] noted that most of the individuals with knowledge about the vaccine were women over 25 years of age, with more than nine years of schooling, and belonging to the middle and upper classes. Our study supported these findings, since all women without knowledge of the vaccine had less than nine years of schooling.

Television (44%) was the main outlet through which information about the vaccine was obtained, followed by healthcare staff of the local clinic they attended (12.5%). Abreu et al. posited that the prominent role television has had in disseminating information derives from the fact that the Ministry of Health ran a national campaign on TV when the HPV vaccine was introduced in the immunization schedule of girls aged 11 to 13 years in 2014, which may have increased the knowledge of the population about immunization, but not about the virus. This might explain the higher levels of lack of knowledge about the virus than the vaccine. Although local clinics were named the second most important source of advice on vaccination, the proportion of individuals electing television was substantially greater, which possibly indicates the shortcomings of primary care in the promotion of health. More studies are needed to understand if these shortcomings stem from the non-dissemination of information or the way information is passed on to family members. For a part of the population, the messages disseminated on television are probably more enticing and easier to understand.

More than half (57%) of the interviewees were aware the vaccine target audience. The 17% who said they would not have their relatives immunized did not understand the role of immunization. Kornfeld et al.[9] suggested that many parents are against vaccination for fear of adverse events and lack of knowledge about the safety of vaccines and their positive impacts on the health of children. It is clear that misinformation about the benefits of immunization and vaccine safety are obstacles to increasing the proportion of immunized girls in the studied population. Schools are strong allies in the process of educating people about the need to immunize young women, but other outlets are needed to disseminate this knowledge to their families, especially parents and guardians, and encourage the immunization of young women.

The young women aged 9-21 years included in the study were the daughters (56%), sisters (3%), nieces (22%), or granddaughters (19%) of the patients. Most of them had been instructed to seek immunization against HPV, with advice to this end coming mainly from the schools they attended. This finding differs from a study carried out in the state of Ceará, which showed television as the predominant source of information about immunization.

The latest data collected from Datasus indicates that HPV vaccination coverage in Pernambuco reached 63.55%. This percentage is much lower than the 90% targeted by the Ministry of Health. In our population, 83% of the young women took all shots, while none of the young women not educated on vaccination (14%) was immunized. Unawareness of the need for HPV vaccination was the main reason for not non-immunization in our study. Other reasons such as fear of early sexualization of adolescents, cited in other articles, were not mentioned in our study.

Our findings indicate that lack of access to information was directly associated with low vaccination adherence in the study population. Quality information must be delivered to the families of the immunization target audience. A National Immunization Program cannot be successful without a broad campaign to provide information and education to the general population.

The literature presents solid evidence of the safety and efficacy of the quadrivalent HPV vaccine. Adverse reactions occur rarely, and are mostly limited to fever and local pain. Eight percent of the young women interviewed in our study had adverse reactions, a proportion greater than the averages published in the literature. They had fever lasting less than 48 hours with no need for medical intervention.

CONCLUSION

Our study found there was an increase in conversations about the importance of HPV vaccination in the households of the interviewees. As a result, many of the interviewees sought immunization. This corroborates the idea that lack of knowledge about why young women should be vaccinated is a hindrance to family members encouraging them to get immunized. Having a family member with cervical cancer encouraged discussion about the HPV vaccine. This may explain why we saw a higher-than-average proportion of vaccinated young women in our study.

The present study has its limitations. It is a cross-sectional study, with the methodological obstacles inherent to this type of study, in which there is a reliance on high prevalence and data collection at a single moment in time, which hinder the establishment of causality.

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