Original Study

Factors Influencing the Recommendation of the Human Papillomavirus Vaccine by Serbian Pediatricians

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A B S T R A C T

Objectives: This research was undertaken to investigate the knowledge and attitudes regarding Human Papillomavirus infection and the Human Papillomavirus (HPV) vaccine among pediatricians who work in primary health care and to determine their intention to recommend the HPV vaccine as an important measure for the primary prevention of cervical cancer. We assessed the factors associated with the intention to recommend the vaccine.
Study Design: This cross-sectional study was conducted in March and April 2012. This research included all pediatricians who worked with school children in public primary health care institutions in Belgrade. A research instrument questionnaire had been designed for this study.
Results: The response rate was 78.7%. The knowledge of pediatricians related to HPV infection and the HPV vaccine was estimated as poor. However, pediatricians recognized the need for additional education in this field. The most-frequently reported barrier to HPV vaccination was the financial concern (68.2%). Alternatively, according to the pediatricians, the most common parental barrier to vaccination was the lack of information on the vaccine (67.2%). Nearly two-thirds of the pediatricians were willing to recommend the vaccine (60.2%). The factors associated with the pediatricians' intention to recommend the vaccine included the parents' attitudes.
Conclusion: The majority of pediatricians accept the HPV vaccine and recommend it to their patients. It is necessary to improve cooperation between parents and pediatricians to increase immunization coverage and develop national consulting strategies with a focus on the prevention of HPV infection.
Key Words: HPV vaccination, Pediatricians, Knowledge, Attitudes, Intention

Introduction

Cervical cancer is a significant problem in women's reproductive health and it is the third most common malignant disease in this population. There are approximately 530,000 registered new cases and 275,000 deaths from cervical cancer every year globally. In Serbia, the incidence of cervical cancer is 20.9 per 100,000 women, while the number of deaths is 9.2 per 100,000 women, placing Serbia with the second highest mortality rate in Europe from this disease.[1]

The most important risk factor for developing cervical cancer is an infection with Human Papillomavirus (HPV). There are several genotypes of HPV categorized, according to their epidemiologic association with cervical cancer, in low and high risk HPV types. Among them, in the group of high-risk HPV types, 16 and 18 are by far the most responsible ones for cervical cancer (>70% in all geographic areas), followed by 31, 33, 35, 45, 52, and 58; in the group of low-risk HPV, types 6 and 11 are responsible for more than 90% of genital warts.

The administration of the HPV vaccine as a primary prevention measure provides effective protection against infections caused by the types of virus that are included in the vaccine. The use of the HPV vaccine prevents the occurrence of persistent infection and reduces the incidence of precancerous lesions and malignant diseases caused by certain types of HPV.[3,4] There are 2 vaccines: a quadrivalent vaccine and a bivalent vaccine, both of which are highly effective in preventing HPV infection.[4,5]

Several well-designed clinical studies have confirmed the safety and efficacy of the HPV vaccine.[6-8] Nevertheless, certain controversies regarding ethical issues and the long-term effects or complications after the application of the vaccine still exist.[9,10,11] Several factors have been highlighted as responsible for the delaying of the recommendation and vaccination: underestimation of HPV risk, the challenge of completing a 3-dose regimen, long-term safety, concerns about cost, and parental barriers to acceptance. Besides, the vaccine safety is compromised because of the erroneous claims about the connection between vaccines and mental retardation reported by political figure Michele Bachmann.[11] Both vaccines are designed to prevent an initial infection with oncogenic types HPV-16 and HPV-18. The best protection is achieved if the vaccine is administered prior to sexual activity and exposure to infection. Thus far, the data suggest that the persistence of immunity after vaccination is approximately 7 years for both vaccines, but

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only if the woman was not infected with HPV at the time of vaccination.[12-14] For this reason, various national immunization programs recommend the administration of the vaccine to girls aged 11-14 years, before the first exposure to sexual contact, as a part of the calendar of compulsory vaccination.[3,7,15]

Nearly all European countries have approved both HPV vaccines, issued national recommendations, and offer coverage of the vaccines by health care insurance for the target group of females, and the vaccines are given on demand.[16] In Serbia, there is still no guideline or national recommendation for HPV vaccination. Epidemiologic data on the high rates of incidence and mortality from this disease indicate the need to address this public health problem in our population of women.[1]

As the vaccine is intended for school-age girls, recommendations regarding vaccination are within the framework of the pediatric practice. The knowledge and attitudes of pediatricians are of great importance because their opinions influence parents' decisions of whether to accept the vaccine.[16] Experiences in the communities where a vaccination program is in place reveal the existence of different barriers, dilemmas, and ethical issues regarding the acceptance of HPV vaccination by parents and pediatricians.[17,18] This research was undertaken to investigate the knowledge and attitudes about HPV infection and the HPV vaccine among pediatricians who work in primary health care and their intention to recommend the HPV vaccine. We assessed the factors (socio-demographic characteristics of the respondents, knowledge and attitudes) associated with the pediatricians' intention to recommend the vaccine.

Methods

Research Design and Study Population

This cross sectional study was conducted in March and April 2012. The study group comprised all physicians who are specialized in pediatrics and working in the departments for school children in public primary health care institutions and counseling centers for young people, in Belgrade, the capital city of Serbia. Overall, there are 16 health centers in Belgrade with 174 pediatricians.[19]

After obtaining the approval of all of the institutions, the heads of the pediatric departments were contacted and asked to gather their staff pediatricians. In every institution all pediatricians were gathered together by the head of the department and 2 researchers who distributed the anonymous questionnaires among pediatricians. The pediatricians had twenty minutes to complete and return the questionnaire to the researcher. During those twenty minutes all pediatricians were sitting in the same room and they could not consult the scientific literature or each other. Employed pediatricians were not reimbursed for their time.

Data Collection

The study instrument was a 28-item self-administered questionnaire specifically designed for the purposes of this study based on a detailed literature review and previous research in this area,[17,20] as well as consultation with experts in this field. The survey was anonymous.

The questionnaire had 5 parts.

1. The first part had 3 questions assessing the following sociodemographic variables: gender, age, and years of work experience.
2. The second part addressed the educational needs of the participants and had 3 questions (whether doctors need to be more educated on the HPV vaccine and who should educate physicians and patients regarding the HPV vaccine).
3. The third part (15 closed questions) tested the knowledge of the pediatricians about the HPV vaccine. Knowledge was calculated as the sum of correct answers. Each correct answer scored 1 point, and no points were given for incorrect answers. The maximum score was 15. Based on the total score of knowledge, the subjects were divided by quartiles.
4. The fourth part was related to the pediatricians' attitudes and contained 6 questions divided into 3 groups. The first group (2 questions) was related to the pediatricians' barriers to recommending these vaccines and the parents' barriers to accepting the vaccines (based on the opinion of the pediatricians). The answers were offered in the form of statements and the respondents were asked to mark all the statements that they agreed with. Here, the respondents were offered the opportunity to write down the obstacles that they faced regarding the recommendation and use of vaccine if they were not previously listed. The second group (3 questions) considered attitudes about the changes in behavior after vaccination. The respondents indicated whether they agreed or disagreed with a particular statement. The response 'I agree' was coded as 1, while the answer 'I do not agree' was coded as 0. The third group (1 question) was related to attitudes regarding vaccination of boys. As for the other attitudes, the respondents indicated whether they agreed or disagreed with each statement.
5. The fifth part referred to the intention of the pediatricians to recommend the HPV vaccine and it included only 1 question: 'Would you recommend the HPV vaccine to your patients?'

The questionnaire was piloted with a group of ten pediatricians. After receiving information on the study and before completing the questionnaire, the pediatricians gave informed consent for participation. The statistical results of the pilot test were not included in the final statistics.

Data Analysis

Basic descriptive statistics and frequency calculations were performed on all of the variables. The reliability of the knowledge scale was assessed by Cronbach alpha. The comparison between pediatricians' choice of whether to recommend the HPV vaccine and the socio-demographic characteristics of the pediatricians, the educational needs of the participants,