

PUBLIC HEALTH

ATTITUDE AND PRACTICE ON HUMAN PAPILLOMAVIRUS, HUMAN PAPILLOMAVIRUS VACCINE AND ASSOCIATED FACTORS AMONG POPULATION IN THE REPUBLIC OF KOSOVA

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Key words: human papillomavirus, cancer, Republic of Kosova, attitude, practice

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Abstract

Approximately 50-80% of sexually active women are exposed to at least one HPV variant during their lifetime. Based on the 2015 annual report of the National Institute of Public Health of Kosova, 68 new cases of cervical cancer were detected. The aim of the study was to investigate the attitude and practice regarding Human Papillomavirus (HPV) infections and the Human Papillomavirus vaccine in the population of the Republic of Kosova. Material and methods: A cross-sectional survey was conducted to assess the knowledge concerning HPV infections among the population aged 18 to 35+ years. The study was conducted during the period of time June 2021 –to August 2021. The sample included 500 participants. The questionnaire was anonymous, and participants were free to end their participation any time, without completing the questionnaire. Results: Regarding the claim „The HPV vaccine is safe“, more than half of the respondents, respectively 58.6% declare that they do not know, 33.4% of the respondents agree, 6.0% gave an incorrect answer / disagree, and 2.0% did not answer. The percentage difference between the unknown and correct answers is statistically significant for $p < 0.05$. Conclusion: This study found out that the attitude towards the HPV vaccine among people of the Republic of Kosova is low to moderate. HPV vaccines should be included in the national immunization programs, since there is not still established national vaccination program for HPV vaccination.

ЈАВНО ЗДРАВЈЕ

СТАВОВИ И ПРАКТИКИ ЗА ХУМАН ПАПИЛОМАВИРУС, ВАКЦИНА ЗА ХУМАН ПАПИЛОМАВИРУС И ПОВРЗАНИ ФАКТОРИ МЕГУ НАСЕЛЕНИЕТО ВО РЕПУБЛИКА КОСОВО

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Печатарски права: ©2022 Ernad Kosumi, Милаим Косуми, Моме Спасовски. Оваа статија е со отворен пристап дистрибуирана под условите на нелокализирана лиценца, која овозможува неограничена употреба, дистрибуција и репродукција на било кој медиум, доколку се цитираат оригиналните автор(и) и изворот.

Конкурентски интереси: Авторот изјавува дека нема конкурентски интереси.

Извадок

Приближно 50-80% од сексуално активните жени се изложени на барем една варијанта на ХПВ во текот на нивниот живот. Врз основа на годишниот извештај на Националниот институт за јавно здравје на Косово за 2015 година, откриени се 68 нови случаи на рак на грлото на матката. Целта на студијата беше да се истражи ставот и практиката во однос на инфекциите со хуман папиломавирус (ХПВ) и вакцината против хуманиот папилома вирус кај населението на Република Косово. Материјал и методи: Спроведена е студија на пресек за да се проценат знаењето за ХПВ инфекциите кај популацијата на возраст од 18 до 35+ години. Студијата е спроведена во периодот јуни 2021 година до август 2021 година. Примерокот опфати 500 учесници. Прашалникот беше анонимен, а учесниците можеа слободно да го прекинат своето учество во секое време, без да го пополнат прашалникот. Резултати: Во однос на тврдењето „ХПВ вакцината е безбедна“ повеќе од половина од испитаниците, односно 58,6% се изјасниле дека не знаат, 33,4% од испитаниците се согласуваат, 6,0% дале неточен одговор/ не се согласуваат, а 2,0% не одговориле. Процентуалната разлика помеѓу непознатите и точните одговори е статистички значајна за $p < 0,05$. Заклучок: Оваа студија покажа дека односот кон ХПВ вакцината кај жителите на Република Косово е низок до умерен. ХПВ вакцините треба да бидат вклучени во националните програми за имунизација, бидејќи сèуште не постои воспоставена национална програма за вакцинација против ХПВ.

Introduction

Human papillomavirus (HPV) infection is an increasing public health threat worldwide due to the morbidity, mortality, and expenses associated with cervical, vulvar, anal, penile, head, and neck cancers^{1,2}

It is generally accepted that the main risk factors are related to the sexual behavior, for instance, early age of sexual activity at onset, number of lifetime sexual partners, and lack of consistency in condom usage³⁻⁶.

Around 50-80% of sexually active women are exposed to at least one HPV variant during their lifetime⁷. The continuing infections with certain types of HPV is related to advancing HPV-associated infections (non-malignant and malignant)⁸.

Cervical cancer is the second most common cancer in women worldwide and the third most common cancer worldwide regardless gender⁹⁻¹¹. Despite the knowledge on HPV prevention and the causes of HPV, around 274.000 deaths from cervical cancer are recorded each year and above 85% of them are in developing nations¹². Etiologically, HPV is responsible for 90-93% of cases with cancer of the anus, 12-63% of cases with cancer of the oropharynx, 36-40% of cases with cancer of the penis, 40-64% of cases with cancer of the vagina and 40-51% of cases with cancer of the vulva¹³. About 70% of cervical cancer are caused by HPV variants 16 and 18¹⁴. Genital warts are benign tumors most frequently triggered by low-risk varieties of HPV¹⁵. More than 90% of genital warts are associated with low-risk HPV varieties 6 and 11¹⁵.

Data on the cancer cases in Kosovo are not available since a national can-

cer bureau is in establishing process, and documentation procedures have yet to be formalized. Nevertheless, incidence data offered for 2013 registers 224 breast and 27 cervical cancer cases, although these will undervalue, particularly in the case of cervical cancer. A study guide by Knowles and Packer in 2008 estimated that at least 50% of female genital cancer cases in Kosova are not officially recorded¹⁶. Based on the 2015 Annual Report of the National Institute of Public Health of Kosova, 68 new cases of cervical cancer were identified in Kosova within the 2015. Another cross-sectional survey in 2016 led by Romejko-Wolniewicz et al. reported a high incidence rate of cervical cancer in Kosova ASR(W)=23.8 and a high mortality rate as well ASR(W)=9.2¹⁷.

HPV vaccination has provided optimism on decreasing the incidence of infections, morbidity, and mortality from HPV-associated cancer. Recent recommendations include the administration of the vaccine to adolescents and adult females aged 9 to 26 years as well as eligible males of similar age in order to decrease their probability of developing genital warts and avoid cancer¹⁸. Three prophylactic HPV vaccines for high-risk HPV varieties are available in numerous nations worldwide: 2-, 4- and 9-valent vaccines. The vaccines are intended to be administered, before the first sexual intercourse when possible. The 4-valent vaccine against HPV-6, HPV-11, HPV-16, and HPV-18 was licensed in 2006; the 2-valent vaccine anti HPV-16 and HPV-18 in 2007, and the 9-valent vaccine, anti HPV-6, HPV-11, HPV-16, HPV-18, HPV-31, HPV-33, HPV-45, HPV-52, and HPV-58) in 2014¹⁹. The first dose is usually recommended at ages 11-12 years old. Immunization

can begin at the age of 9. Only two doses are required if the first dose was delivered before the 15th birthday. Teenagers and young adults who start the vaccination series later, at ages 15 to 26, require three doses of HPV vaccine. Children aged 9 to 14 who have received two doses of HPV vaccine not more than five months apart need a third dose. Three doses are also suggested for individuals aged 9 to 26 years who have a weakened immune system. Vaccination is not suggested for every person older than age 26 years. Certain adults aged 27 to 45 years who have not been previously vaccinated may opt to get the HPV vaccine after discussing with their doctor their threat from the new HPV diseases and the potential benefits of vaccination for them. HPV vaccination at this age range delivers is less beneficial because more people of this age range have been exposed to HPV²⁰.

The aim of the study is to examine the attitude and practice regarding Human Papillomavirus (HPV) infections and the Human Papillomavirus vaccine among population in the Republic of Kosova.

Materials and methods

A cross-sectional study assessed the knowledge of HPV infection among the residents aged 18 to 35+ years. The investigation was conducted from June 2021 to August 2021.

The sample was obtained based on convenience sampling. From the data of the participants in the population awareness group were collected using a pre-designed questionnaire through an online version: distribution in Google Form via social media.

A study explanation was offered each time it was required. Each part of the questionnaire offers the study's aims and actions for protective privacy. Participation was voluntary, and all data were kept confidential.

Criteria for inclusion was the age of the participants from 18 to 35+ years. This age group was selected because it is the part of the population that are highly exposed to HPV infection and HPV-associated diseases and a critical part of the population that decides to have their children vaccinated against HPV. The latter derives from the fact that the individuals subject to mandatory HPV vaccination are 12-year-old girls who do not decide for themselves and whose vaccination requires parental consent.

Considering the fact that there is no proven questionnaire is in the Republic of Kosova, A series of questions based on Knowledge, Attitude, and Practice (KAP) study in conditions with a related socio-cultural environment in the Republic of Kosova to explore KAP about HPV. A pilot survey was also conducted to test the validity and reliability of the questionnaire. The questionnaire strategy is based on the study and the literature review of the attitude and practice concerning HPV and the HPV vaccine.

The questionnaire was organized into two parts. The first part of the questions presents evidence of the respondent's socio-demographic characteristics, including age, gender, location (urban or rural), level of education, occupation, marital status, and sexual activity. The second part discusses the respondents' attitudes and practices regarding HPV and the HPV vaccine.

The questionnaire was piloted on 50 respondents, and in accordance with the feedback, improvements and modifications were made to the target residents and the study's purposes.

Written approval was not required to protect confidentiality. Participants were set free to terminate their participation without completing the questionnaire.

Results are presented in summary. The data collected were used only for the purpose of this survey.

A password-protected computer was used to store the Excel spreadsheets and to save filled questionnaires.

Results

In the study for attitude and practice on Human papillomavirus and associated factors took part 500 respondents, residents of the Republic of Kosovo.

Socio-demographic data of the respondents

The Prevalence of adult groups in the study ranged from 21.0% (age group from 18 to 21 years) to 18.8% (age group from 34+ years). The percentage difference is statistically insignificant for $p < 0.05$.

A larger percentage of respondents are female 60.0%, and 40.0% are male.

The respondents surveyed mostly have secondary education $n=301$ (60.2%), followed by university $n=108$ (21.6%), with the lowest incidence without education $n=24$ (4.8%) (Table 1).

$N=324$ (64.8%) are from the city (urban environment), and $n=176$ (35.2%) are from the village.

Next, 26.0% of the respondents are married, 40.4% are singles, 31.4% are in a relationship, other 0.4% and 1.8% are divorced. Approximately half of the respondents - 44.8% are employed, 33.4% are students, 14.6% are unemployed, 3.0% are still in school, and 4.2% have some other professional status.

Attitude and Practice on Human Papilloma Virus and Human Papilloma Virus Vaccine

According to the opinion of the respondents to the claim "HPV vaccine is safe", more than half of the respondents 58.6% answer with 'do not know', 33.4% of respondents agree, 6.0% gave an incorrect answer / disagree, and 2.0% of respondents did not answer. The percentage difference between the unknown answer versus the correct answer is statistically significant for $p < 0.05$ (Difference test. $p=0.0000$) (Table 1).

Table 1. Presentation of the respondent's answers to the claim „HPV vaccine is safe“.

The HPV vaccine is safe.[TRUE]	Count	%
Agree	167	33.4
Disagree	30	6.0
I do not know	293	58.6
Missing answers	10	2.0

A relationship was found between socio-demographic characteristics (age, sex, place of residence, education level, employment status, marital status, condom use) versus attitude to the claim "HPV vaccine is safe" for $p < 0.05$ (Pearson Chi-square: 47.6549, $df=8$, $p=.000000$; Pearson Chi-square: 9.70680, $df=2$, $p=.007802$; Pearson Chi-square: 6.54538, $df=2$, $p=.037904$; Pearson Chi-square: 46.9912, $df=6$, $p=.000000$; Pearson Chi-square: 36.2230, $df=8$, $p=.000016$; Pearson Chi-square: 20.0002, $df=8$,

$p=.010335$; Pearson Chi-square: 18.9114, $df=2$, $p=.000078$).

Based on the respondents opinion on the statement "I may be infected with HPV in the future", 46.6% of the respondents answered "I do not know", 41.2% of the respondents gave a correct answer/agree, 9.2% gave an incorrect answer / disagree, and 3.0% of the respondents do not give an answer. The percentage difference between agreeing versus I do not know is statistically insignificant for $p > 0.05$ (Difference test. $p=0.0853$) (table 2).

Table 2. Presentation of respondent's answer to the claim „I may be infected by HPV in the future“.

I may be infected by HPV in the future.[TRUE]	Count	%
Agree	206	41.2
Disagree	46	9.2
I do not know	233	46.6
Missing answers	15	3.0

According to the opinion of the respondents' to the claim (to which only females answered) "I may have cervical cancer in the future", more than half of the respondents from females 71.3% answered "I do not know", 7.3% answered that the premise is correct/agreed, 19.0% gave an

incorrect answer / disagreed, and 2.4% of respondents do not give an answer. The percentage difference between the unknown answer and the correct answer is statistically significant for $p < 0.05$ (Difference test. $p=0.0000$) (table 3).

Table 3. Presentation of respondent's answer to the claim „I may have cervical cancer in the future“.

I may have cervical cancer in the future. [TRUE] Count	Count	%
Agree	22	7.3
Disagree	57	19.0
I do not know	214	71.3
Missing	7	2.3

No relationship was registered between socio-demographic characteristics (age, sex, place of residence, level of education, employment status, marital status, sexual activity, and condom use) versus attitude to the claim “I may have cervical cancer in the future” for $p > 0.05$ (Pearson Chi-square: 2.78025, $df=8$, $p=.947382$; Pearson Chi-square: .493238, $df=2$, $p=.781438$; Pearson Chi-square: .106401, $df=2$, $p=.948190$; Pearson Chi-square: 2.53492, $df=6$, $p=.864540$; Pearson Chi-square: 6.01943, $df=8$, $p=.645055$; Pearson Chi-square:

9.26466, $df=8$, $p=.320464$; Pearson Chi-square: 4.60279, $df=2$, $p=.100119$; Pearson Chi-square: 3.11747, $df=2$, $p=.210402$).

Furthermore only 8.8% of the respondents would give the vaccine to their daughter, 28.0% would not, 62.0% answered “I do not know,” and 1.2% did not answer. The percentage difference between not knowing whether to give the vaccine versus the remaining response modules is statistically significant for $p < 0.05$ (Difference test. $p=0.0000$) (table 4).

Table 4. Presentation of respondent's answer to the question „Would you give your daughter the HPV vaccine“.

Would you give your daughter the HPV vaccine?	Count	%
Yes	44	8.8
No	140	28
I do not know	310	62
Missing answers	6	1.2

As can be seen on the table below 97% of the respondents did not receive the HPV vaccine, 2.2% did not answer, and 0.8% received the HPV vaccine. The percentage difference

between “not receiving the vaccine” versus “yes” is statistically significant for $p < 0.05$ (Difference test. $p=0.0000$) (table 5).

Table 5. Presentation of respondent's answer to the question „Received HPV vaccine“.

Received the HPV vaccine?	Count	%
Yes	4	0.8
No	485	97.0
Missing answers	11	2.2

Discussion

Based on our information, the present study is the most widespread and more complete investigation guided to collecting data on the attitude toward Human Papillomavirus (HPV) infections and the HPV vaccine as well as to discover the associated factors among the population in the Republic of Kosova.

Regarding the claim “The HPV vaccine is safe”, more than half of the respondents (58.6%) do not have a clue about it, and 6.0% of the respondents gave an incorrect answer / disagree, while only 33.4% of the respondents agreed that the HPV vaccine is safe. Skepticism concerning the safety and efficacy of the vaccine is closely related to the survey conclusions guided by Garbutt JM *et al.*²¹.

Currently, the HPV vaccine is confirmed to be safe and effective with no consequences which have been stated for years²². HPV vaccination could cause minor consequences for a few recipients, such as muscle pain and headaches²³. Highlighting the safety of HPV vaccination could help decrease the obstacles among the population of the Republic of Kosova toward receiving the vaccines.

When asked about the opinion of the respondents on the statement “I may be infected with HPV in the future”, 41.2% of the respondents gave a correct answer/agree, and 46.6% of the respondents answered “I do not know”, however only 0.8% of the sampling population received the HPV vaccine.

As a result of the KAP framework, it is well proven that knowledge fre-

quently plays a significant role in healthcare for improving their attitudes and even possible uptake of the HPV vaccine. With a greater level of knowledge, citizens will sense optimistic attitudes, and with additional positive attitudes, respondents will happen to be more inspired to practice prevention associated with HPV-associated diseases. Therefore, more efficient communication policies among physicians and the general public must distribute correct and detailed information²⁴.

To the opinion of the respondents on the claim (to which only females answered) “I may have cervical cancer in the future”, more than half of the respondents, females (71.3%) answered “I do not know”. In comparison, only 7.3% answered that the premise is correct/agreed. Community education regarding cervical cancer is low. Traditional rules often stop women from talking or pursuing remedies if they do not have any indications. Women can be examined at local health centers, but it is necessary to be consulted with a regional hospital for curing. Consequently, there is a necessity for a health-education program regarding cervical cancer that includes the media through different channels; such a program might have the major impact.

Ordering the vaccine for youths usually demands parental permission, the highest challenges to HPV vaccine approval are parental knowledge, attitudes, and beliefs^{25,26}. Many parents do not recognize the rush to target youths, but this is the most valuable moment to vaccinate them^{26,27}. As is shown in table 5, only 8.8% of the respondents would give

the vaccine to their daughter, 28.0% would not, and 62.0% answered with “I do not know”.

One study has revealed that most of the parents believe that their child is too young and would not start sexual activity for some years to come^{26,28,29}. Moreover, some parents believe vaccinating their children against an STI delivers a message that it is acceptable or expect them to become sexually active²⁸.

Our findings suggest that family doctors should take an active role in distributing health information regarding HPV vaccination in the future. Recent surveys in Italy³⁰⁻³² and Argentina³³ showed that people who took information from doctors and medical institutions tended to have improved knowledge and greater perceived demand for additional information regarding the HPV vaccine. Throughout the KAP framework, it is well recognized that knowledge frequently plays a key role in health care for enhancing their attitudes and even possible uptake of HPV vaccination. Once an educational intervention was done, 20% of those who initially did not intend to take the vaccine were ready to have their youngsters vaccinated. Their survey caused us to be conscious of the significance of community education and organizing our patients for this possible intervention.

Regardless of confirmed safety and efficiency, HPV vaccine uptake percentages keep far lower than Healthy People’s aim and lower than other vaccines suggested for youths^{34,35}. As shown in Table 5, 97% of the respondents did not receive the HPV vaccine, 2.2% did not answer,

and 0.8% received the HPV vaccine. Furthermore, while evaluating HPV vaccine uptake, several surveys discovered that a person’s gender, race, ethnicity, and socioeconomic condition affected vaccination uptake percentages^{36,37}. Reaching the greatest potential HPV vaccination coverage percentage not simply has the possibility to reduce HPV occurrence and related cancer mortality percentages but can also create herd immunity as well. The higher the number of people in a society who are immune to HPV, the less likely the people that are not immune to obtain or get in touch with HPV. Although the coverage is presently inferior for boys than girls, and male HPV vaccination is yet arguable in some circles, the latest survey recommended that an intensified attempt to vaccinate boys is expected to protect more individuals from HPV-related diseases for the same cost³⁸.

This study has several potential limitations. Firstly, the study questions were investigated by a cross-sectional study design. Such an approach avoids determining essential relations between numerous factors and results. Secondly, the data were collected using a self-reported questionnaire, so there is possibility that several answers could have contained inaccurate information.

Apart from this criticism, the privacy of the survey might have lowered the deviation in the answers.

This investigation, though, presents important strengths: first, it brings evidence from a considerable number of participants, and this permits research of enormously weak associations between variables; second,

the evidence was complete; third, the participation rate was very high, possibly signifying increased interest for this survey.

Conclusions

This study found that the attitude toward the HPV vaccine among people of the Republic of Kosova was low to moderate and that the vaccine uptake was only 0.8%, which was significantly associated with attitude toward HPV, the vaccine, and other factors.

HPV vaccines should be included in national immunization programs, as there is not established national immunization program on HPV vaccination yet.

Consequently, for the effective application of the HPV vaccination in the National Immunization Program of Kosova, health care workers, especially in primary care, are the main component in boosting the vaccination and its acceptability, given that they have an overall impact on the health behavior of their patients.

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