

**Awareness, Knowledge and Attitudes about human papillomavirus infection
and vaccination among university students in Astana**

(A cross-sectional study)

Master of Public Health Thesis Project Utilizing Professional Publication Framework

Torgyn Shokanbayeva

MPH Candidate

Primary advisor: Raushan Alibekova, MD, MPH, PhD

Secondary advisor: Azliyati Azizan, MS, PhD

**Master of Public Health Program
Nazarbayev University School of Medicine
Astana, Kazakhstan, 2018**

TABLE OF CONTENTS

ACKNOWLEDGMENTS	3
ABSTRACT	4
1. INTRODUCTION	5
1.1 BACKGROUND/ LITERATURE REVIEW.....	5
1.2 LACK OF PUBLIC HEALTH RESEARCH IN FIELD OF HPVSTUDY.....	7
1.3 OBJECTIVES OF THE STUDY.....	8
2. RESEARCH METHODOLOGY	8
2.1 STUDY DESIGN.....	8
2.2 STUDY POPULATION	9
2.3 SAMPLING METHODOLOGY	10
2.4 SAMPLE SIZE	11
2.5 STUDY INSTRUMENT.....	12
2.6 PILOT STUDY.....	14
2.7 DATA COLLECTION.....	14
3. ETHICAL CONSIDERATIONS	14
4. DATA ANALYSIS	15
4.1 DATA ENTRY AND CLEANING.....	15
4.1 STATISTICAL ANALYSIS.....	15
5. RESULTS	17
6. DISCUSSION	21
7. STUDY LIMITATIONS	24
8. CONCLUSION AND RECOMMENDATION	25
REFERENCE LIST	27
APPENDIX 1. TABLES	31
APPENDIX 2. QUESTIONNAIRE (ENGLISH, KAZAKH, RUSSIAN)	47
APPENDIX 3. CONSENT FORM (ENGLISH, KAZAKH, RUSSIAN)	63

ACKNOWLEDGMENTS

I would like to express deep acknowledgment to my advisors Dr. Raushan Alibekova and Dr. Azliyati Azizan for their great contribution to this project. Despite their busy schedules, my advisors committed their time to keep track of my progress and to give me feedback at each stage of this project. With their valuable advises I was able to overcome those difficulties faced during study planning and study implementation.

I am grateful to all faculty members of the School of Medicine at Nazarbayev University, especially to Dr. Byron Crape for his great support during the whole study period and his assistance in the consult of the study.

I am also thankful to the students, to the faculty, and to the administration of Nazarbayev University, Eurasian National University, Astana Medical University, and Kazakh Agrotechnical University, especially to Assiya Turganbayeva, Zhanerke Tleukulova, Saule Tardzhibayeva, and Makpal Dzhaxymbetova for their willingness to cooperate and for giving me a permission to conduct this study.

I also would like to express my gratitude to my MPH classmates, my family and friends for their encouragement and support during these two years of study.

ABSTRACT

Background

Human Papilloma virus is one of the most common infections caused by a virus. Most importantly is the fact that this infection can lead to cervical cancer, which represents a great burden for Kazakhstani women. There is a vaccine to prevent cervical cancer. Kazakhstan has introduced human papilloma virus vaccination program. However, there are no published public health studies about behavioral perception towards HPV and HPV vaccination that could support and encourage such a vaccination program.

Aims of the study

The aim of this study was to explore university students' awareness, knowledge, and attitudes towards HPV and HPV vaccination, by determining the level of HPV infection knowledge among university students, the attitudes and beliefs of university students towards the HPV infection and vaccine, and the willingness of the students for HPV vaccine uptake. Moreover, this study aimed to identify the differences in awareness and attitudes towards HPV infection and vaccination by socio-demographic and behavioral characteristics.

Methodology

The study design was cross-sectional which utilized the framework of knowledge, attitude, and practice. Sample size for this study was 392. Study population consisted of bachelor and graduate students studying at Nazabayev University, Kazakh Agricultural University, Eurasian National University, and Medical University of Astana and aged between 16 and 30 years. Simple random sampling was used to create the list of universities included in the study. Data were collected through paper based questionnaires which required 15 minutes to be completed. The independent variables were sociodemographic and behavioral characteristics of the

participants. In this study there were three dependent variables: knowledge about HPV and HPV vaccination, attitudes towards HPV vaccination, and intention to receive the vaccine. Univariate, bivariate, and multivariate logistic regression were performed in order to obtain the results of the study.

Results

Mean age of participants was 19 ± 2.3 years, and 69.6 % were women. 51.8% of respondents heard about HPV and 37% heard about HPV vaccination prior to the study. University lectures or professor were the main source of information for those students who answered that they heard about HPV vaccination. 41% of students had high level of knowledge, 49% of students had positive attitudes towards HPV vaccine and intention to receive the vaccine. Variables such as age, family income, whether the student heard about HPV and HPV vaccine, and alcohol consumption were found as significant predictors of the knowledge score. Only whether the student heard about HPV before the study was statistically associated with attitudes towards HPV vaccination. Intention score to receive HPV vaccination was statistically associated with academic performance of the student, whether the student heard about HPV and HPV vaccination prior to the study, or whether the student uses contraception.

Conclusion

Overall, this study revealed low level of knowledge among the majority of students. In contrast there were more students with high attitude score to the vaccine and high intention score to receive the vaccine. This study could contribute to the improvement of the existing vaccination policy in Kazakhstan and educational policy as well.

1. Introduction

1.1 Background/Literature Review

Human papillomavirus (HPV) is considered to be the most common viral infection that affects reproductive tract (World Health Organization, 2018). Among the general populations, prevalence of HPV varies from 7-14% (Raychaudhuri and Mandal, 2012). Moreover, HPV is responsible for almost all cases of cervical cancer and is the cause of a great proportion of other anogenital and head and neck cancer (Bruni *et al.*, 2017). In addition, HPV may lead to recurrent juvenile respiratory papillomatosis and genital warts, mainly caused by HPV types 6 and 11 (Lacey, Lowndes and Shah, 2006). There are several type of HPV; of particularly concern are HPV types 16 and 18 which account for about 70% of all cases of cervical cancer worldwide (Clifford *et al.*, 2006). One of the well-recognized modes of transmission of HPV is skin-to-skin genital contact (World Health Organization, 2018). Therefore, right after both men and women become sexually active it is the highest point of time to acquire the infection (Khan *et al.*, 2016).

On a worldwide scale, cervical cancer is the fourth leading cause of death among females and is also the third most diagnosed type of cancer (Jemal, Bray and Ferlay, 1999). According to the data from International Agency for Research on Cancer, every year there are 530,000 new registered cases of cervical cancer with 275,000 mortalities (Ferlay *et al.*, 2010). More than 85% of deaths take place in countries with low- and middle-income economies (Hopkins and Wood, 2013). There are several risk factors known to increase the incidence of cervical cancer such as early marriage, multiple sexual partners, poor practice of personal hygiene, oral contraceptives, HIV co-infection, smoking, and low socioeconomic status (Raychaudhuri and Mandal, 2012).

On the Kazakhstani scale, cervical cancer also represents a major threat to public health. Moreover, according to Bruni *et al.* (2017), in Kazakhstan every year 2789 women are diagnosed

with cervical cancer from which 982 women die. Apart from that cervical cancer is the second most frequent cancer among women and is the first most frequent cancer among women aged between 15 and 44 years with the age-specific incidence of 36 (Bruni *et al.*, 2017). Epidemiological study in Kazakhstan revealed that between 1999 and 2008 the average age of cervical cancer patients was 53.5 ± 0.7 years (Igissinov *et al.*, 2012).

Unlike cases with other cancers, there is a vaccination to prevent HPV infection and from patients developing cervical cancer. Nowadays, two brands of HPV vaccines are available on a commercial basis. There is evidence to support that both of these vaccines provide almost full protection for the following HPV strains (Schiffman and Wacholder, 2012). Cervarix and Gardasil are able to protect from 16 and 18 oncogenic strains, while the second one is also able to protect from 6 and 11 HPV strains (Hopkins and Wood, 2013). These vaccines are recommended before the first sexual activity and are offered as 3 doses over a period of 6 months (Bosch *et al.*, 2012). The price for both of the vaccines for the necessary three shots is equal to more than US\$300 (Lancet, 2011). Therefore, due to such relatively high price, these vaccination offers might not be affordable for every country of the world.

By 2010, 33 countries had introduced HPV vaccination programs into the health care systems, and there were few developing countries among them (Lancet, 2011). Kazakhstan was exception from those countries, and introduced HPV vaccination policy only few years later. In 2013 the government has introduced the National HPV Immunization program that targeted 11-12 year old females in Atyrau and Pavlodar regions, and Almaty and Astana cities (Bruni *et al.*, 2017). Moreover, Kazakhstani media have reported unsuccessful case of vaccination of a female in Pavlodar, which caused resonance to the acceptance of the vaccine (Tengrinews.kz, 2018). Although media claim that vaccination still exists there is no information on details of the

program and the reported HPV vaccination coverage. Therefore, it is difficult to discuss the success of the vaccination program in Kazakhstan.

1.2 Lack of public health research in field of HPV

Although some data are available, it is clear that there is lack of research on the topic of HPV in Kazakhstan. There were found published studies on the topics of HPV epidemiology in Kazakhstan (Igissinov *et al.*, 2012), prevalence and genotyping of HPV in Kazakhstan (Niyazmetova *et al.*, 2017), and HPV and P16 expression in oral and oropharyngeal cancer in Kazakhstan (Adilbay *et al.*, 2018). However, there was not found any published research to explore public knowledge and understanding of HPV as well attitudes towards HPV vaccination. It is important to note that learning about behavioral perception towards HPV vaccination is an essential requirement to develop a health policy that will support HPV vaccination among population (Dany, Chidiac and Nassar, 2015).

Unlike in Kazakhstan, there are many studies done abroad that use knowledge, attitudes and practice assumption (KAP) framework to study HPV and HPV vaccination. These studies did not only focus on the level of knowledge and perception of HPV infection and vaccination, but they also demonstrated various associations with sociodemographic variables. A cross-sectional study conducted among medical students of Malaysia showed that students from clinical year group had a better knowledge and higher proportion to accept HPV vaccine (Shafei *et al.*, 2014). Moreover, similar study conducted in Lebanon demonstrated that students coming from graduate programs and health related majors, and those who are vaccinated had significantly higher knowledge scores of HPV infection (Dany, Chidiac and Nassar, 2015). Yet the results of the study by Khan *et al.* (2016) revealed that students have poor understanding

about the health problems associated with HPV, its prevention, modes of transmission and availability of HPV vaccine in Pakistan.

Given the fact that HPV represents a burden for the public of Kazakhstan and there is lack of public health research, this study explored university students' awareness, knowledge, and attitudes towards HPV and HPV vaccination. The results of this study will provide the baseline knowledge and understanding of students. Moreover the results of the study may also assist Kazakhstani government to adopt the changes to the existing policy to improve the vaccination program.

1.3 Objectives of the study

- 1) To determine the level of HPV infection knowledge among university students.
- 2) To determine the attitudes and beliefs of university students towards the HPV infection and vaccine.
- 3) To identify the willingness of the students for HPV vaccine uptake.
- 4) To identify the differences in awareness and attitudes towards HPV infection and vaccination by socio-demographic and behavioral characteristics.

2. Research Methodology

2.1 Study Design

A cross-sectional survey about HPV and HPV vaccination was conducted among Astana students between January and February 2018 to describe their knowledge about HPV and HPV vaccination, attitudes towards HPV vaccination, and intention score to receive the vaccine. This

quantitative study utilized the framework of knowledge, attitude, and practice. This study involved primary data collection by administering a structured paper based questionnaire.

There were several reasons to select cross-sectional design for this study. First of all cross sectional study is the best option to identify the prevalence and to find the association between variables that can be further used in cohort or randomized clinical trial studies (Mann, 2003). Secondly, this type of study design is quick and cheap to implement (Mann, 2003). Therefore, fewer resources are required to run the study. However, one of the major limitations of cross-sectional study is that it does not differentiate between cause and effect from simple association (Mann, 2003). But still the purpose of the study is not to establish cause and effect, but only the association between socio demographic variables and knowledge of HPV and HPV vaccine, attitudes towards HPV vaccination, and intention score to receive HPV vaccination. Therefore, taking into consideration both strengths and limitations cross sectional research design is the best option to study this research question given limited time and resources.

2.2 Study Population

Eligible participants for this study were students who were enrolled at multiprofile universities (which offer different disciplines of study majors) or in the medical universities where the number of students is high. In terms of level of age and level of study, bachelor or undergraduate students were recruited for participation in the study.

It is important to note that graduate level students were also included in this study as educational programs at the Nazarbayev University School of Medicine are only offered at the graduate level. Therefore, the eligible age range for this study was assumed to vary from 16 to around 30 years.

Particularly for this study, three multiprofile universities (Nazarbayev University, Kazakh Agricultural University, and Eurasian National University) and one medical university (Astana Medical University) were chosen. These are the largest universities of Astana city in terms of number of students and which offer a wide range of specialties for prospective students. Eurasian National University offers 65 undergraduate programs and 97 graduate programs while Kazakh Agricultural University offers 37 undergraduate and 42 graduate programs (Granty 2017-2018 Kazakhstanskiye VUZy, instituty i universitety, 2018). Nazarbayev University, also offers a wide range of programs as it has 8 different schools. Astana Medical University offers only 6 undergraduate and 8 graduate programs, but still the number of students is high. In total there are 4269 students at Nazarbayev University, 4552 students at Astana Medical University, 8971 students at Eurasian National University, and 10064 students at Kazakh Agricultural University.

Taking into consideration the differences between universities and in order to ensure comparability between students, certain faculties were chosen for the study. Students were chosen from the following faculties of the universities: Astana Medical University (Deanery of the faculty public health, pharmacy, stomatology, Deanery of general medicine); Nazarbayev University (School of Science and Technology, School of Humanities and Social Sciences, School of Medicine), Eurasian National University (Faculty of Natural Sciences, Faculty of Mechanics and Mathematics, Faculty of Journalism and Political Science, Faculty of Transport and Energy); Kazakh Agricultural University (Faculty of Veterinary Sciences and Animal Husbandry, Energy Department, Humanitarian Faculty, Technical Faculty).

2.3 Sampling methodology

This study involved two methods of sampling. First stage of sampling involved random selection of the biggest university of Astana, both in terms of students' number and the variety of

study programs offered. The second stage of sample selection involved non-random convenience sampling. As universities were chosen, authorities of the universities were approached to obtain permission for the study. After that, the university authorities assigned certain groups to undergo the survey. Therefore, students were approached based on availability criteria.

It is important to note that according to Kazakhstani educational system students of the universities study in one particular group from the beginning until the end of their studies. In case of Nazarbayev University, student study in one particular group only at the graduate level.

2.4 Sample size

Total sample size was identified by using STAT CALC option in EPI INFO free software. Total sample size was estimated to be 518 people based on a confidence interval of 95%, significance level of 0.05, and power of 80%. In this software sample size was estimated by using the method of Fleiss with a continuity correction , which can be found below (Sullivan and Soe, 2007). Where in this formula, n_1 stands for number of exposed, n_2 stands for number of unexposed, r for ratio of unexposed to exposed, p_1 for proportion of exposed with outcome of interest, and p_2 is the proportion of unexposed with outcome.

$$n = n_1 \left[1 + \sqrt{1 + \frac{2(r + 1)}{n_1 |p_2 - p_1|}} \right]$$

Data for calculating sample size data was obtained from previous study on knowledge about cervical cancer early warning signs and symptoms, risk factors and vaccination among students at a medical school conducted in Al-Ahsa, Kingdom of Saudi Arabia. According to findings of the study awareness about of the availability of HPV vaccine was different among male and female students, and was equal to 38.7% for males and 27. 2% for females (A.A. *et al.*,

2014). Therefore, outcome variable is awareness about of the availability of HPV vaccine, and exposed group are female students.

In Kazakhstan there is approximately equal distribution of males and females, which are 8,726,100 and 9,388,400 respectively (Bruni *et al.*, 2017). Therefore, it can be assumed that there is also equal distribution of gender at universities. Accordingly the same gender distribution was assumed for this study.

However, taking into consideration 80% response rate and 90% eligibility rate, the total sample size was increased to 673.

2.5 The Study Instrument (The questionnaire itself)

This cross-sectional survey used validated questionnaire on HPV knowledge, attitudes and practices from the study by Dany, Chidiac and Nassar (Dany, Chidiac and Nassar, 2015). One the major reason to use already existing questionnaire is that it has already been implemented and therefore was tested (Hyman, Lamb and Bulmer, 2006). Secondly, it requires less time to construct the questionnaire when you have already existing template. Thirdly, in the existing questionnaire, conceptualization and measurement of the variables is already done (Hyman, Lamb and Bulmer, 2006).

However, limitations of using the pre-existing questions were also taken into account. As some of the questions were not exhaustive they were either deleted or changed to be adapted to this study. Moreover, the questionnaire was translated into Kazakh and Russian languages. In order to meet the aims of the study, questions on sexual life and lifestyle characteristics were added.

The questionnaire consisted from 47 items and covered five major topics: social and demographic characteristics of the students, questions on awareness about physical health problems, questions on knowledge of HPV and HPV vaccination, questions on attitudes towards HPV vaccination and HPV infection, and behavioral characteristics of the participants (see the questionnaire in the appendix).

The first section of the questionnaire contained only multiple choice questions which asked the participants about their social and demographic characteristics such as age, gender, nationality, level of study, study major, and perceived economic status and academic performance. The second section contained Yes/No, multiple choice, and open ended questions to ask the respondents about their current health status, youth health problems, and reasons for health problems, awareness about HPV and HPV vaccination, and sources they heard about HPV vaccination. Open ended questions were not mandatory to be answered but were used as a thought provocative tool used to prepare students to answer the questions in the next sections.

The third and the fourth sections were considered as the most important sections as they contained the questions about knowledge of HPV and HPV vaccination, attitudes towards HPV vaccination, and intention score to receive vaccination. Both of these sections were adopted from similar study conducted in Lebanon (Dany, Chidiac and Nassar, 2015). The section of knowledge score included 12 True or False knowledge statements about HPV infection or HPV vaccine. The next section included 12 statements with 5 point Likert scale: Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly disagree which assessed respondents' attitudes towards HPV vaccine. The fourth section also included one question with a 10 point scale on how much the student is ready to uptake HPV vaccine, where 1 stood for least likely willingness and 10 for most likely willingness to receive the vaccine.

The last section contained the most sensitive questions and asked students about their behavioral characteristics such as presence of sexual life, presence of sexual partner, method of contraception, presence of sexually transmitted infection, test for STI, maintenance of healthy diet, smoking status and alcohol consumption. In this section, there were both Yes/No and multiple choice questions.

The questionnaire was conducted in Russian, Kazakh, and in English languages depending on the request and study language of the participants.

2.6 Pilot study

In order to validate and to finalize the questionnaire, a pilot study was conducted. All three language versions of the questionnaire were tested by 23 students from Eurasian National University and Nazarbayev University between October and November 2017. One of the major reasons to conduct a pilot study is that it might provide advance warning about where the main research study could fail, where research protocols may not be followed, or whether proposed methods or instruments are inappropriate or too difficult (van Teijlingen and Hundley, 2001).

2.7 Data collection

Paper-based survey was done in order to obtain data for this study. The data was collected between January and February 2018. It took about 15 minute for each participant to complete the questionnaire. None of the participants refused to answer or stopped answering at any point of the survey.

3. Ethical Considerations

This study design and the content of the questionnaire were approved by Nazarbayev University School of Medicine Research Ethical Committee (NUSOM REC). In order to ensure that all ethical considerations were taken into account, verbal consent was received from the participants. All the participants were familiarized with the study topic and goals. Moreover, thorough description of study risks and benefits was given for the participants.

4. Data analysis

4.1 Data entry and data cleaning

After the first week of survey administration of the questionnaire, collected data was entered into database in the Microsoft Excel software. Database template (codebook) was prepared with all of the variables of the study in advance. Data entry proceeded in three weeks in February 2018.

Next step after data entry involved the procedure of cleaning of raw data. This procedure was completed to ensure that data was entered correctly and there is no inconsistency. Moreover, this step was also important for the analysis part.

4.2 Statistical Analysis

The following step involved the actual data analysis. Data was analyzed using STATA 13. Data analysis consisted from descriptive statistics including frequencies and mean scores for the demographic variables. Data was presented as mean (SD) for continuous variables, and as frequency and percentage for categorical variables. Moreover, in order to learn more about the relationship between several independent variables and three dependent variable, multivariate logistic regression was used. Odds ratios, confidence intervals, and significance value were

defined by the software in order to show the association between independent and dependent variables.

Based on the students' answers to the questionnaire three score were calculated three scores: knowledge score, attitude score, and intention score.

4.2.1 Knowledge score

The knowledge score was identified using responses of the participants to 12 knowledge statements. As knowledge score was categorical variable, mean value was found and was considered as a cutoff point. Correct answers to the statements were categorized as 1, all incorrect and "Do not know" answers were categorized as 0. Knowledge score lower than mean value was considered to be low score, and knowledge score higher than mean value, was considered to be high score. High knowledge score meant that student was more knowledgeable regarding HPV infection and HPV vaccination in comparison with students with low score.

4.2.2 Attitude score

Similar to knowledge score, attitude score was identified using the students' responses to the 12 statements with 5-point Likert scale. In the case of attitude score, mean value was considered to be a threshold level. Answers such as "Strongly agree" and "Agree" were categorized as 1, and the rest three options which were "Neither agree nor disagree", "Disagree", and "Strongly Disagree" were categorized as 0. If the student had a total attitude score that was higher than mean value, the higher was his attitudes towards HPV vaccination, and the same rule was applied for attitude scores lower than threshold level. Higher attitude score meant that participants had more positive attitude in comparison with students with low attitude score.

4.2.3 Intention score

This score reflecting readiness of the participant to undertake the vaccine was measured with one question and was measured on a 10 point scale. First mean value was identified for this variable. After that, answers of the participants were categorized. Score lower than mean was considered to be low willingness, and score higher than mean was associated with higher willingness respectively. The higher the score, the higher intention had the participant to receive the vaccination.

5. Results

5.1 Participant's characteristics

In total, 982 students participated in the study. A summary of the baseline demographics and characteristics of the study participants is provided in Table 1. The mean age of the participants was 19.9 years (SD±2.3), with 55.1% of the participants aged between 18 and 21 years. The majority of the students who participated in the study identified themselves as females (69.6%) and as representatives of Kazakh (95.4%) nationality. In terms of level of study, more than half of the respondents studied at undergraduate level (84.2%), with 38.5% of the participants enrolled at 1st year of study. 256 (65.3%) participants identified themselves as having good academic performance and 149 (38%) of them were enrolled in health related majors, with correspondingly 243 (62%) students enrolled in non-health related majors. The majority of the participants perceived their family income as middle (79%) and their health status as good (60%).

More than half of the respondents did not have sexual life (75.5%). Among the participants who had sexual life (24.5%), 36.5% were in a committed relationship and 71.1 % used condoms as a way of contraception (Table 2).

Most of the students (96.2%) never had sexually transmitted infections and only 51 (13%) of them had tested themselves for sexually transmitted infection. In terms of relation to healthy lifestyle, 246 (62.8%) reported that they maintain a healthy diet, 349 (89%) do not smoke cigarettes, and 288 (73.5%) of the respondents do not consume alcohol (Table 3).

5.2 Sources of information about HPV vaccine

Before participating in this study 203 (51.8%) students were familiar with HPV and 145 (37%) students heard about HPV vaccination. Table 2 shows the distribution of sources of information on HPV vaccine among the participants. University lectures or professor were the main source of information for those students who answered that they heard about HPV vaccination (Table 4).

5.3 Knowledge of HPV infection and vaccination

About half of the respondent students knew HPV transmission routes (43.8%), the fact that there are different types of HPV, and whether HPV can lead to genital warts (40.6%) and that there are different types of HPV (49%). However, 57.9% did not know that HPV does not cause herpes, and 53.3% of the participants did not know that not only women can be infected with HPV and show symptoms. Moreover, about one fourth of the participants (25.8%) knew that in most cases infected women do not show symptoms. The fact that HPV can be transmitted from a carrier to his/her partner not only if the carrier shows symptoms was also unfamiliar facts for the students, as a result only 29.9% answered the question correctly. More than half of the participants of the survey did not know about the fact that HPV can cause cervical cancer (60.2%) and not all HPV types can cause cervical cancer (69.4%) (Table 5).

Regarding the statements about HPV vaccine, the majority of the participants did not know the right answers to the statements. N=267 (68.1%) did not know that the statement that

HPV vaccines have the same effect whether the female receive vaccination before or after being infected with HPV is false. N=258 (65.8%) did not know that HPV vaccine is best taken before the start of sexual activities. Accordingly 66.6% of the students did not know the answer to the statement that HPV vaccine can only be taken after the age of 18 years (Table 5).

Taking into consideration that outcome variables of this study are categorical, statistically, the mean knowledge score was 2.20 ± 2.10 (out of 12). This score was also identified as a threshold level. Knowledge scores less than mean values were identified as low level of knowledge, and correspondingly score higher than 2.20 were identified as high level of knowledge. Out of total number of the participants, N=161 (41%) had high level of knowledge. As a result of bivariate chi squared test, variables such as gender, academic performance, STI, diet, smoking status were found not statistically significantly associated with the level of knowledge. The rest of the variables were found associated with the score of knowledge about HPV and HPV vaccination (Table 6).

5.4 Attitudes towards HPV vaccination

The majority of the participants did not believe that they have increased risk for HPV infection (61.7%). About half of the respondents are neutral about the fact that Kazakhstani students have a high risk for HPV (47.7%) and that they should receive HPV vaccination (45.2%). Adversely, majority of the participants of the study believe that contracting HPV is serious (63.8%) and can be life threatening (56.6%). Although 61.8 % of the respondents believe that there is a vaccine to prevent HPV, only 23.7 % of the students agree that they would benefit from getting the vaccine. Accordingly, moderate number of students believes that HPV vaccine is capable of preventing the occurrence of cervical cancer (31.1%), that side effects of the vaccine are reasonable (28.1%) and that these side effects will not deter them from taking the

vaccine (24%). Majority of the students neither agreed nor disagreed that gynecologists should recommend the vaccine to their patients (45.6 %) and they themselves should recommend this vaccine for their female friends (58.2 %) (Table 7).

The mean attitude score in this study was 3.72 ± 2.96 . This score was also identified as a threshold level. Attitude scores less than mean values were identified as negative attitude, and correspondingly scores higher than 3.72 were identified positive attitude. Unlike knowledge score, attitude score was only statistically significantly associated with three variables: heard about HPV, heard about HPV vaccine, and smoking status (Table 8).

5.5 Intention to receive HPV vaccination

The mean intention score is 3.71 ± 2.75 out of 10 (Table 10). Accordingly students with intention score that was more than 3 are at most willing to receive HPV vaccine and students with intention score less than 3 are at least willing to receive HPV vaccine. Among the students who have intention score of 5, there are 21 % of students who were willing to receive HPV vaccine. There are only 4.9% of the participants who were willing to receive the vaccine at highest intention score. However, there are more students had the least intention score equal to 1 to receive the vaccine (39%) (Table 9).

Chi squared test of intention score to receive HPV vaccination with independent variables, showed that there are mostly statistically significant associations. Similarly to the case of previous dependent variables, gender was not associated with intention score to receive vaccination. Moreover, family income was also not statistically significantly associated with intention score. Apart from that associations with life style characteristics such as diet and smoking status were found to have p value greater than significance value (0.05) (Table 10).

5.6 Multivariate logistic regression

As a result of bivariate logistic regression, crude odds ratios were obtained. Independent variables that were previously statistically associated with dependent variables in chi-squared test were added to the model. As a result given crude odds ratios almost all of the independent variables are statistically significant predictors for the knowledge score, the exception is the year of study (Table 11). In case of attitude score, smoking status of the student, whether he heard about HPV and HPV vaccine is a statistically significant predictor (Table 12). And for the last dependent variable, all of the independent variables, except for year of study and income level were found as statistically significant predictor variables for intention score to receive vaccination (Table 13).

Based on the outcome of the bivariate logistics regression, multivariate logistic regression was performed. This time as there was controlling for confounding, adjusted odds ratios were obtained. As a result of multivariate logistic regression less predictor variable were found to be statistically significantly associated with knowledge score, attitude score and intention score. From Table 14, variables such as age, family income, whether the student heard about HPV and HPV vaccine, and alcohol consumption were found as significant predictors of the knowledge score. According to Table 15, only whether the student heard about HPV before the study was statistically associated with attitudes towards HPV vaccination. In the last table, Table 16, intention score to receive HPV vaccination is only statistically associated with academic performance of the student, whether the student heard about HPV and HPV vaccination prior to the study, or whether the student uses contraception.

6. Discussion

Current study aimed to identify the association between students' knowledge of HPV, attitudes towards HPV vaccination and intention score to receive the vaccine and various socio-

demographic characteristics of Astana students. Several socio demographic variables were found to statistically significantly predict the outcome variables.

Out of approached 392 people, all of them gave the consent to participate in the study and no one withdrawn during the process of survey. Therefore, response rate can be considered to be 100%. According to Fincham response rate approximating 60% should be the goals of researchers (Fincham, 2008). Moreover, 60% is the minimum level that is required by certain biomedical journals (Livingston and Wislar, 2012). Therefore this number of participants can be considered as enough to represent the total population of Astana students. Considering this it can be assumed the bias of non-response rate is not present in this study. However, response rate cannot be the only factors during the assessment of survey quality and bias (Livingston and Wislar, 2012).

To discuss the awareness about HPV, about half of the students heard about HPV infection and only one third of them heard about HPV vaccination before participating in this study. The major source from which students heard about vaccine was university lecture or university professor (37%). However, another study showed that in terms of distribution of source of information on HPV vaccination program, friend was the major source of information about HPV (Shafei *et al.*, 2014). The previous study had also the same trend with current study as more students were aware about HPV infection and less students were aware about HPV vaccination(Shafei *et al.*, 2014).

This study was the first cross sectional study in Kazakhstan on the topic of HPV and HPV vaccination that used the framework of knowledge, attitude, and practice. Moreover, this study quantitatively examined the knowledge and behavioral perception of students. The results of this study revealed that more than half of the respondents had low level knowledge of HPV

infection. However, despite the low scores of knowledge, half of the students had positive attitudes towards HPV vaccination and were willing to receive HPV vaccination was also high.

The results from previous studies conducted abroad also demonstrate low level of knowledge of HPV among students. The findings are similar to the study by Dany, Chidiac and Nassar (Dany, Chidiac and Nassar, 2015), whereby despite low to moderate score of knowledge of HPV, there were high scores attitudes towards vaccination and intention score to receive the vaccine (Sherman *et al.*, 2016). Similar study conducted in Nigeria revealed that only 17.7% of female students were aware of HPV (Makwe, Anorlu and Odeyemi, 2012). In addition, a study conducted in England demonstrated that despite being aware of HPV only 27% of the respondents knew that HPV causes cervical cancer. Therefore, findings from this study and from previous studies reveal that there is inadequate knowledge of HPV irrespective of the country.

Such relatively low knowledge of HPV infection can be related to several factors that are peculiar to Kazakhstan. First of all at the university level, only students who are studying health related majors have access to courses that can touch upon the topic of HPV, unlike students studying other majors. At the school level, the topic of HPV is not included in the study curriculum. Secondly, HPV vaccination program was introduced relatively recently and it has not been popularized among the population. Moreover, the target population of vaccination program is primarily youth who have not yet started their sexual life.

From a bivariate analysis, this study revealed that students pursuing health majors are more knowledgeable about HPV and HPV infection. 98 out of 149 students studying health majors such as pharmacy, public health, and medicine, and only 63 out of 243 students studying non health related major had high knowledge score. However, similar study conducted among medical students in Malaysia revealed that being medical student does not necessarily guarantee

good perception and knowledge of HPV infection and vaccination (Shafei *et al.*, 2014). Moreover, that study also found that medical students at the last years of program are more knowledgeable in comparison with students studying at earlier years (Shafei *et al.*, 2014). These findings point out to the fact that HPV related topics are covered in a later period of the study. Therefore, future studies should take into account this fact and search for associations between study curriculum and knowledge of students about HPV.

About half of the participants of the study had positive attitudes towards HPV vaccination and high intention score to receive HPV vaccination. The reason why only half of the participants have good perception of vaccine and are ready to receive it can be explained by the fact that HPV is a sexually transmitted infection and therefore represents a potential barrier to acceptance of the vaccine as the vaccine should be administered prior to the first sexual contact (Cavazos-Rehg *et al.*, 2009). According to the study conducted in 1991, median age at first sex for the cohort born between 1970 and 1974 was 23.7 for males and 20.7 for females in Kazakhstan (Bruni *et al.*, 2017). The finding of the study can be applicable to this study as mean age of the participants was 19.9 and 24.5% of the respondents already had sexual life. Therefore, by default one fourth of the participants were not suitable for vaccination, as they already have had their first sexual contact.

7. Study Limitations

Despite that this study has focused on under-researched topic, has sufficient sample size, and can serve as a baseline for further studies, there are certain limitations. First of all this is a cross sectional study. Consequently any inferences about cause and effect cannot be drawn from this study. Second limitation is that study instrument was a self-reported questionnaire and therefore the data could be underreported. The third limitation of this study is about

selection bias. As it was mentioned earlier one of the sampling techniques was non random sampling within universities during selection of students.

8. Study implications and further recommendations

In conclusion, this cross sectional study has focused on the topic of knowledge of HPV infection and perception of HPV vaccination which included attitudes towards and intention to receive the vaccine among Astana students. The study was conducted among 4 Astana universities and included 392 participants aged between 16 and 30 years. Overall, this study revealed low level of knowledge among the majority of students. In contrast there were more students with high attitude score to the vaccine and high intention score to receive the vaccine. Moreover, multivariate logistic regression demonstrated several sociodemographic and behavioral characteristics were statistically significantly associated with knowledge, attitude, and intention score. The results of current study are consistent with previous studies.

Implications of this study can be twofold. On the one hand this study could contribute to the improvement of the existing vaccination policy in Kazakhstan. Results of this study might suggest that not only school children but also students need to be addressed by the vaccination policy. On the other hand this study could provide the suggestions for vaccination policy. Current study revealed significant knowledge gaps among the students about HPV infection and vaccination. Therefore, authorities should target students and introduce the changes into study curriculum that will enhance their knowledge about HPV infection and vaccination.

In order to improve upon the current study, further recommendations can be provided. First of all in order to make the study generalizable to the whole population of Kazakhstan,

the scale of this study should be expanded to the national scale. Secondly, in order to keep track the changes in terms of knowledge about HPV and perception of HPV prevention, the design of the study should be changed from cross sectional to longitudinal panel study. Thirdly, in order to provide evidence based recommendations for introduction of policy changes, it is important to conduct thorough policy analysis as well as the effectiveness of policy interventions.

Reference list:

- Al-Darwish, A.A. *et al.* (2014) 'Knowledge about cervical cancer early warning signs and symptoms, risk factors and vaccination among students at a medical school in Al-Ahsa, Kingdom of Saudi Arabia', *Asian Pacific journal of cancer prevention : APJCP*, 15, pp. 2529–2532. Available at:
<http://www.embase.com/search/results?subaction=viewrecord&from=export&id=L602084299%5Cnhttp://fq5np7af6j.search.serialssolutions.com?sid=EMBASE&issn=15137368&id=doi:&atitle=Knowledge+about+cervical+cancer+early+warning+signs+and+symptoms,+risk+factors+and>.
- Adilbay, D. *et al.* (2018) 'HPV infection and P16 expression in oral and oropharyngeal cancer in Kazakhstan', *Infectious Agents and Cancer*. *Infectious Agents and Cancer*, 13(1), pp. 2–5. doi: 10.1186/s13027-018-0175-8.
- Bosch, F. X. *et al.* (2012) 'Reframing cervical cancer prevention. Expanding the field towards prevention: Of human papillomavirus infections and related diseases', *Vaccine*. Elsevier Ltd, 30(SUPPL.5), pp. F1–F11. doi: 10.1016/j.vaccine.2012.05.090.
- Bruni, L. *et al.* (2017) 'Human Papillomavirus and Related Diseases Report', (July). Available at: <http://www.hpvcentre.net/statistics/reports/MYS.pdf>.
- Cavazos-Rehg, P. A. *et al.* (2009) 'Age of sexual debut among US adolescents', *Contraception*. Elsevier, 80(2), pp. 158–162. doi: 10.1016/J.CONTRACEPTION.2009.02.014.
- Clifford, G. *et al.* (2006) 'Chapter 3: HPV type-distribution in women with and without cervical neoplastic diseases', *Vaccine*, 24(SUPPL. 3), pp. 26–34. doi: 10.1016/j.vaccine.2006.05.026.
- Dany, M., Chidiac, A. and Nassar, A. H. (2015) 'Human papillomavirus vaccination: Assessing

knowledge, attitudes, and intentions of college female students in Lebanon, a developing country', *Vaccine*. Elsevier Ltd, 33(8), pp. 1001–1007. doi: 10.1016/j.vaccine.2015.01.009.

Ferlay, J. *et al.* (2010) 'Estimates of worldwide burden of cancer in 2008: GLOBOCAN 2008', *International Journal of Cancer*, 127(12), pp. 2893–2917. doi: 10.1002/ijc.25516.

Fincham, J. E. (2008) 'Response rates and responsiveness for surveys, standards, and the Journal.', *American journal of pharmaceutical education*, 72(2), p. 43. doi: 10.5688/aj720243.

Granty 2017-2018 Kazakhstanskiye VUZy, instituty i universitety (2018). VUZy Astany, Astana [online] Available at: <https://univision.kz/astana.html> [Accessed 31 Mar. 2018].

Hopkins, T. G. and Wood, N. (2013) 'Female human papillomavirus (HPV) vaccination: Global uptake and the impact of attitudes', *Vaccine*. Elsevier Ltd, 31(13), pp. 1673–1679. doi: 10.1016/j.vaccine.2013.01.028.

Hyman, L., Lamb, J. and Bulmer, M. (2006) 'The Use of Pre-Existing Survey Questions : Implications for Data Quality', *European Conference on Quality in Survey Statistics*, p. 3.

Igissinov, N. *et al.* (2012) 'Epidemiological Aspects of Morbidity and Mortality from Cervical Cancer in Kazakhstan', *Asian Pacific Journal of Cancer Prevention*, 13(5), pp. 2345–2348. doi: 10.7314/APJCP.2012.13.5.2345.

Jemal, A., Bray, F. and Ferlay, J. (1999) 'Global Cancer Statistics: 2011', *CA Cancer J Clin*, 49(2), p. 1,33-64. doi: 10.3322/caac.20107. Available.

Khan, T. M. *et al.* (2016) 'Knowledge, attitudes, and perception towards human papillomavirus among university students in Pakistan', *Papillomavirus Research*. Elsevier, 2, pp. 122–127. doi: 10.1016/j.pvr.2016.06.001.

Lacey, C. J. N., Lowndes, C. M. and Shah, K. V. (2006) 'Chapter 4: Burden and management of non-cancerous HPV-related conditions: HPV-6/11 disease', *Vaccine*. Elsevier, 24, pp. S35–S41. doi: 10.1016/J.VACCINE.2006.06.015.

Lancet, T. (2011) 'Financing HPV vaccination in developing countries', *The Lancet*. Elsevier Ltd, 377(9777), p. 1544. doi: 10.1016/S0140-6736(11)60622-3.

Livingston, E. H. and Wislar, J. S. (2012) 'Minimum response rates for survey research', *Archives of Surgery*, 147(2), p. 110. doi: 10.1001/archsurg.2011.2169.

Makwe, C. C., Anorlu, R. I. and Odeyemi, K. A. (2012) 'Human papillomavirus (HPV) infection and vaccines: Knowledge, attitude and perception among female students at the University of Lagos, Lagos, Nigeria', *Journal of Epidemiology and Global Health*, 2(4), pp. 199–206. doi: 10.1016/j.jegh.2012.11.001.

Mann, C. (2003) 'Observational Research Methods. Research Design II', *Pcod*, 20(1), pp. 54–61. doi: 10.1136/emj.20.1.54.

Niyazmetova, L. *et al.* (2017) 'Application of molecular genotyping to determine prevalence of HPV strains in Pap smears of Kazakhstan women', *International Journal of Infectious Diseases*. The Author(s), 54, pp. 85–88. doi: 10.1016/j.ijid.2016.11.410.

Raychaudhuri, S. and Mandal, S. (2012) 'Current status of knowledge, attitude and practice (KAP) and screening for cervical cancer in countries at different levels of development.', *Asian Pacific journal of cancer prevention : APJCP*, 13(9), pp. 4221–7. doi: 10.7314/APJCP.2012.13.9.4221.

Schiffman, M. and Wacholder, S. (2012) 'Success of HPV vaccination is now a matter of

coverage', *The Lancet Oncology*, 13(1), pp. 10–12. doi: 10.1016/S1470-2045(11)70324-2.

Shafei, M. N. *et al.* (2014) 'Knowledge and Perception on Human Papilloma Virus Infection and Vaccination among Medical Students of a University in Malaysia', *Procedia - Social and Behavioral Sciences*. Elsevier B.V., 116, pp. 2707–2710. doi: 10.1016/j.sbspro.2014.01.640.

Sherman, S. M. *et al.* (2016) 'Awareness and knowledge of HPV and cervical cancer in female students: A survey (with a cautionary note)', *Journal of Obstetrics and Gynaecology*, 36(1), pp. 76–80. doi: 10.3109/01443615.2015.1041886.

Sullivan, K. M. and Soe, M. M. (2007) 'Sample Size for a Cross-Sectional , Cohort , or Clinical Trial Studies Sample Size for Cross-Sectional & Cohort Studies & Clinical Trials', pp. 1–3. doi: 10.1126/science.1249098.Sleep.

van Teijlingen, E. R. and Hundley, V. (2001) 'The Importance of Pilot Study', *Social Research Update*, (35). Available at: <http://aura.abdn.ac.uk/handle/2164/157>.

World Health Organization. (2018). Human papillomavirus (HPV) and cervical cancer. [online] Available at: <http://www.who.int/mediacentre/factsheets/fs380/en/> [Accessed 27 Mar. 2018].

Tengrinews.kz. (2018). Nazvany prichiny oslozhneniy posle privivki ot raka u shkolnic v Pavlodarskoi oblasti. [online] Available at: https://tengrinews.kz/kazakhstan_news/nazvanyi-prichinyi-oslojneniy-privivki-raka-shkolnits-255176/ [Accessed 29 Mar. 2018].

Appendix 1. Tables

Table 1

Baseline demographics and characteristics of the participants.

Variable	n (%)	Mean	SD	Range
Number of participants	392 (100%)			
Age (years)		19.9	2.3	16-30
<18	40 (10.2%)			
18-<21	216 (55.1%)			
>=21	136 (34.7%)			
Gender				
Male	119 (30.4%)			
Female	273 (69.6%)			
Ethnicity				
Kazakh	374 (95.4%)			
Other	18 (4.6%)			
Year of study				
1 st year undergraduate	151 (38.5%)			
2 nd year undergraduate	97 (24.7%)			
3 rd year undergraduate	20 (5.1%)			
4 th year undergraduate	36 (9.2%)			
5 th year undergraduate	26(6.7%)			
Graduate	62(15.8%)			
Level of study				
Undergraduate	330 (84.2 %)			
Graduate	62 (15.8 %)			
Major				
Arts	4 (1 %)			
Engineering	21 (5.4%)			
Humanities	65 (16.6%)			
Law	1 (0.3%)			
Maths and Physics	24 (6.1%)			
Medicine	81 (20.7%)			
Natural Sciences	48 (12.2%)			
Pharmacy	16(4.1%)			
Public Health	52 (13.3%)			
Social Sciences	30(7.6%)			
Other	50 (12.7)			
Major type				
Health-related	149 (38%)			
Non-health related	243(62%)			
Academic Performance				
Excellent	107 (27.3%)			
Good	256 (65.3%)			
Satisfactory	29 (7.4%)			
Family income				
High income	36 (9.2%)			
Middle income	310 (79%)			
Low income	36 (9.2%)			
Other	10 (2.6%)			
Health status				
Excellent	102 (26%)			

Good	236 (60%)
Satisfactory	5 (1%)
Bad	49 (13%)

Table 2

Description of participants' sexual life

Variable	n(%)
Sexual Life	
Yes	96 (24.5%)
No	296 (75.5%)
Sexual Partner	
Yes, I am in a committed relationship	35 (36.5%)
Yes, I am married	13 (13.5%)
Yes, but I am not limited to only one sexual partner	15 (15.6%)
No	33 (34.4%)
Contraception type	
I do not use	16 (16.7 %)
Condoms	74 (77.1%)
Birth control pills	3 (3.1%)
Other	3 (3.1%)

Table 3

Participant's lifestyle and behavioral characteristics

Variable	n (%)
STI	
Yes	15 (3.8%)
No	377 (96.2%)
Test STI	
Yes	51 (13%)
No	341 (87%)
Diet	
Yes	246 (62.8%)
No	146 (37.2%)
Smoking status	
More than 10 cigarettes daily	2 (0.5%)
6-10 cigarettes daily	6 (1.5%)
1-5 cigarettes daily	35 (9%)
I do not smoke	349 (89%)
Alcohol consumption	
3-7 times a week	4 (1%)
Once a week	10 (2.6%)
Only on weekends and special occasions	90 (23%)

I do not consume alcohol 288 (73.5%)

Table 4

Participants' awareness about HPV and HPV vaccination and sources of information about HPV vaccine

Variable	n (%)
Heard about HPV	
Yes	203 (51.8%)
No	189 (48.2%)
Heard about HPV vaccine	
Yes	145 (37%)
No	247 (63%)
Source heard about HPV vaccine	
University lectures or professor	49 (33.8%)
Internet	30 (20.7%)
Media	27 (18.6%)
Friends	6 (4.1%)
Family	4 (2.8 %)
Other	17 (11.7%)

Table 5

Participants' answers to knowledge statements about human papillomavirus and its vaccination.

Knowledge statement	Correct answer	True n (%)	False n (%)	Do not know n (%)
HPV can be transmitted through vaginal, anal, and oral sex as well as genital to genital contact	True	172 (43.8 %)	14 (3.6 %)	206 (52.6 %)
Human papillomavirus can lead to genital warts (growths on the skin of the genitals)	True	159 (40.6 %)	15 (3.8 %)	218 (55.6 %)
Human papillomavirus can cause herpes	False	113 (28.8 %)	52 (13.3 %)	227 (57.9 %)
There are different types of HPV	True	192 (49 %)	6 (1.5 %)	194 (49.5 %)
HPV can cause cervical cancer	True	141 (36 %)	15 (3.8 %)	236 (60.2 %)
All HPV types can cause cervical cancer	False	35 (8.9 %)	85 (21.7 %)	272 (69.4 %)
Only females can be infected with HPV and show symptoms	False	41 (10.5 %)	142 (36.2 %)	209 (53.3 %)
In most cases, HPV infected women do not show symptoms	True	101 (25.8 %)	49 (12.5 %)	242 (64.7 %)
HPV can be transmitted from a carrier to his/her partner only if the carrier shows symptoms	False	57 (14.6 %)	117 (29.9 %)	217 (55.5 %)
HPV vaccines have the same effect whether the female receive vaccination before or after being infected with HPV	False	38 (9.7 %)	87 (22.2 %)	267 (68.1 %)

HPV vaccine is best taken before the start of sexual activities	True	113 (28.8 %)	21 (5.4 %)	258 (65.8 %)
HPV vaccine can only be taken after the age of 18 years	False	44 (11.2 %)	87 (22.2 %)	261 (66.6 %)

Table 6.

Participants' knowledge score on HPV and HPV vaccination statements stratified by participants' characteristics.

Variable	Knowledge		p-Value	mean \pm SD
	High n (%)	Low n (%)		
All	161 (41%)	231 (59%)		2.20 \pm 2.10
Participants				
Age			p=0.000*	
<21	57 (22.3%)	199 (77.7%)		
\geq 21	104 (76.5%)	32 (23.5%)		
Gender			p=0.112	
Male	56 (47.1 %)	63 (52.9 %)		
Female	105 (38.5 %)	168 (61.5 %)		
Year of study			p= 0.000*	
1st year	33 (21.8%)	118 (75.2 %)		
2nd year	24 (24.7%)	73 (75.3%)		
3rd year	5 (25 %)	15 (75 %)		
4th year	25 (69.4 %)	11 (30.6 %)		
5th year	22 (84.6 %)	4 (15.4 %)		
Graduate	57 (91.9 %)	5 (8.1%)		
Level of study			p= 0.000*	
Undergraduate	104 (31.5 %)	226 (68.5 %)		
Graduate	57 (91.9 %)	5 (8.1%)		
Major type			p= 0.000*	
Health-related	98 (65.8 %)	51 (34.2%)		
Non-health related	63 (25.9%)	180 (74.1%)		

Academic performance			p=0.497
Excellent	41 (38.3%)	66 (61.7 %)	
Good+ Satisfactory	120 (42.1 %)	165 (57.9 %)	
Income			p =0.005*
High income	10 (27.8%)	26 (72.2%)	
Middle income	128 (40%)	192 (60%)	
Low income	23 (63.9%)	13 (36.1%)	
Heard about HPV			p= 0.000*
Yes	131 (64.5 %)	72 (35.5 %)	
No	30 (15.9 %)	139 (84.1%)	
Heard about HPV vaccine			p= 0.000*
Yes	105 (72.4 %)	40 (27.6 %)	
No	56 (22.7 %)	191 (77.3 %)	
Sexual life			p=0.003*
Yes	44 (45.8 %)	52 (54.2%)	
No	149 (50.3 %)	147 (49.7%)	
Sexual partner			p= 0.011*
Yes	35 (55.6%)	28 (44.4%)	
No	126 (38.3%)	203 (61.7%)	
Contraception			p= 0.010*
Yes	41 (53.3%)	36 (46.7%)	
No	120 (38.1%)	195 (61.9%)	
STI			p= 0.129
Yes	9 (60%)	6 (40%)	
No	152 (40.3%)	225 (59.7 %)	
Test STI			p= 0.000*
Yes	39 (76.5 %)	12 (23.5 %)	
No	122 (35.8 %)	219 (64.2%)	
Diet			p=0.205
Yes	107 (43.5%)	139 (56.5%)	

No	54 (37%)	92 (63%)	
Smoking status			p= 0.442
Yes	141 (40.4%)	20 (46.5%)	
No	208 (59.6 %)	23 (53.5%)	
Alcohol consumption			p= 0.000*
Yes	189 (65.6%)	42 (40.4%)	
No	99 (34.4%)	62 (59.6%)	

* Ch-square test, signifies p value <0.05

Table 7

Participants' attitudes towards HPV vaccination statements.

Attitude assessing statement	Strongly agree n (%)	Agree n (%)	Neither agree nor disagree n (%)	Disagree n (%)	Strongly disagree n (%)
Based on my lifestyle, I believe that I have increased risk for the HPV infection	19 (7.9 %)	31 (7.9 %)	100 (25.5 %)	126 (32.1 %)	116 (29.6 %)
I believe that there is a vaccine to prevent HPV	81 (20.7 %)	161 (41.1 %)	127 (32.4 %)	12 (3.0 %)	11 (2.8 %)
Based on my lifestyle, I believe that I would benefit from getting the vaccine	24 (6.1 %)	69 (17.6 %)	190 (48.5 %)	73 (18.6 %)	36 (9.2 %)
I believe that Kazakhstani students have a good chance of contracting HPV	31 (7.9 %)	89 (22.7 %)	187 (47.7 %)	67 (17.1 %)	18 (4.6 %)
I believe that Kazakhstani students should receive the HPV vaccine	57 (14.5 %)	123 (31.4 %)	177 (45.2 %)	22 (5.6 %)	13 (3.3 %)
I believe that contracting HPV virus is serious	94 (24 %)	156 (39.8 %)	121 (30.9 %)	12 (3.0 %)	9 (2.3 %)
I believe that contracting HPV can be life threatening	92 (23.5 %)	130 (33.1 %)	140 (35.7 %)	21 (5.4 %)	9 (2.3 %)
I believe that the	36	86	235	24	11

current HPV vaccine is capable of preventing the occurrence of cervical cancer.	(9.2 %)	(21.9 %)	(60.0 %)	(6.1 %)	(2.8 %)
I believe that the side effects of the vaccine are reasonable	27 (6.9 %)	83 (21.2 %)	236 (60.2 %)	34 (8.7 %)	12 (3.0 %)
I believe that the side effects of the vaccine will not deter me from taking the vaccine.	34 (8.7 %)	63 (16.1 %)	237 (60.4 %)	43 (11 %)	15 (3.8 %)
I believe that all gynecologists should recommend the vaccine to their patients	55 (14.0 %)	116 (29.6 %)	179 (45.6 %)	32 (8.2 %)	10 (2.6 %)
I would recommend this vaccine for my female friends	42 (10.7 %)	76 (19.4 %)	288 (58.2 %)	31 (7.9 %)	15 (3.8 %)

Table 8

Participants' attitude score on HPV vaccination statements stratified by participants' characteristics.

Variable	Attitude		p-Value	mean ± SD
	Positive	Negative		
All Participants	193 (49%)	199 (51%)		3.72±2.96
Age			p=0.200	
<21	120 (46.9%)	136 (53.1%)		
≥21	73 (53.7%)	63 (46.3%)		
Gender			p= 0.928	
Male	59 (49.6%)	60 (50.4%)		
Female	134 (49.1%)	139 (50.9%)		
Year of study			p=0.199	
1st year	70 (36.3%)	81 (53.6%)		
2nd year	48 (49.5%)	49 (50.5%)		
3rd year	8 (40%)	12 (60%)		
4th year	21 (58.3%)	15 (41.7%)		
5th year	9 (34.6%)	17 (65.4%)		
Graduate	37 (59.7%)	25 (40.3%)		

Level of study			p=0.073
Undergraduate	156 (47.3%)	174 (52.73%)	
Graduate	37 (59.68%)	25 (40.32%)	
Major type			p=0.240
Health-related	114 (46.9 %)	46 (30.9 %)	
Non-health related	129 (53.1 %)	97 (39.9 %)	
Academic performance			p=0.288
Excellent	48 (44.9%)	59 (55.77%)	
Good+ Satisfactory	145 (50.9%)	140 (49.12%)	
Income			p=0.193
High income	17 (47.22%)	19 (52.78%)	
Middle income	162 (50.63%)	158 (49.38%)	
Low income	14 (38.89%)	22 (61.11%)	
Heard about HPV			p= 0.015*
Yes	112 (55.2%)	91 (44.8%)	
No	81 (42.9%)	108 (57.1%)	
Heard about HPV vaccine			p= 0.008*
Yes	84 (57.9%)	61 (42.1%)	
No	109 (44.1%)	138 (55.9%)	
Sexual life			p= 0.443
Yes	44 (45.8%)	52 (54.2%)	
No	149 (50.3%)	147 (49.7%)	
Sexual partner			p= 0.167
Yes	26 (41.3%)	37 (58.7%)	
No	167 (50.8%)	162 (49.2%)	
Contraception			p= 0.782
Yes	39 (50.7%)	38 (49.4%)	
No	154 (48.9%)	161 (51.1%)	
STI			p= 0.746
Yes	8 (53.3 %)	7 (46.7 %)	
No	185(49.1%)	192 (50.9%)	
Test STI			p= 0.570
Yes	166 (48.7%)	27 (52.9%)	
No	175 (51.3%)	24 (47.1%)	
Diet			p=0.417
Yes	125 (50.8%)	121 (49.2%)	
No	68 (46.6%)	78 (53.4%)	
Smoking status			p= 0.003*
Yes	12 (27.9%)	31 (72.1%)	
No	181 (93.8%)	168 (48.1%)	
Alcohol consumption			p= 0.385
Yes	55 (52.9%)	49 (47.1%)	
No	138 (47.9%)	150 (52.1%)	

* Ch-square test, signifies p value <0.05

Table 9

Participants' intention score to receive HPV vaccination.

Intention score	n (%)
1	153(39 %)
2	16 (4.1 %)
3	31 (7.9 %)
4	26 (6.6 %)
5	81 (21 %)
6	20 (5.1 %)
7	22 (5.6 %)
8	13 (3.3 %)
9	11 (2.8 %)
10	19 (4.9 %)

Table 10

Participants' intention score to receive HPV vaccination stratified by participants' characteristics.

Variable	Intention score		p-Value	mean ± SD
	High	Low		
All Participants	192 (49%)	200 (51%)		3.71±2.75
Age			p = 0.000*	
<21	95 (69.9%)	41 (30.1%)		
≥21	97 (37.9%)	159 (62.1%)		
Gender			p=0.778	
Male	135 (49.5%)	138 (50.5%)		
Female	57 (47.9%)	62 (52.1%)		
Year of study			p= 0.000*	
1st year	54 (35.8%)	97 (64.2%)		
2nd year	45 (46.4%)	52 (53.6%)		
3rd year	6 (30%)	14 (70%)		
4th year	24 (66.7%)	12 (33.3%)		
5th year	13 (50%)	13 (50%)		
Graduate	50 (80.7%)	12 (19.3%)		
Level of study			p= 0.000*	
Undergraduate	50 (80.7%)	12 (19.3%)		
Graduate	142 (43%)	188 (57%)		
Major type			p=0.001*	
Health-related	89 (59.7%)	60 (40.3%)		
Non-health related	140 (57.6%)	103 (42.4%)		

Academic performance			p= 0.018*
Excellent	42 (39.3 %)	65 (60.7%)	
Good+	150 (52.6%)	135 (47.4%)	
Satisfactory			
Income			p=0.446
High income	14 (38.89%)	22 (61.11%)	
Middle income	160 (50%)	160 (50%)	
Low income	18 (50%)	18 (50%)	
Heard about HPV			p= 0.000*
Yes	132 (65%)	71 (35%)	
No	60 (31.8%)	129 (68.2%)	
Heard about HPV vaccine			p= 0.000*
Yes	88 (60.7%)	57 (39.3%)	
No	143 (48.11%)	104 (57.89%)	
Sexual life			p= 0.000*
Yes	64 (66.7%)	32 (33.3%)	
No	128 (43.2%)	168 (56.8%)	
Sexual partner			p= 0.002*
Yes	42 (66.7%)	21 (33.3%)	
No	150 (45.6%)	179 (54.4%)	
Contraception			p=0.000*
Yes	53 (68.8%)	24 (31.2%)	
No	139 (44.1%)	176 (55.9%)	
STI			p= 0.014*
Yes	12 (80%)	3 (20%)	
No	180 (47.8%)	197 (52.2%)	
Test STI			p=0.000*
Yes	40 (78.4%)	11 (21.6%)	
No	152 (44.6%)	189 (55.4%)	
Diet			p=0.915
Yes	121 (49.2%)	125 (50.8%)	
No	71 (48.6%)	75 (51.4%)	
Smoking status			p=0.531
Yes	23 (53.5%)	20 (46.5%)	
No	169 (48.4%)	180 (51.6%)	
Alcohol consumption			p= 0.000*
Yes	70 (67.3%)	34 (32.7 %)	
No	122 (42.4%)	166 (57.6%)	

* Ch-square test, signifies p value <0.05

Table 11

Crude odds ratios of knowledge score on HPV and HPV vaccination statements.

Variable	OR	CI	p-Value
Age			
<21	Ref.		
≥21	11.34	6.93-18.59	0.000*
Year of study			

1 st year	Ref.		
2 nd year	1.17	0.64-2.15	0.598
3 rd year	1.19	0.40-3.52	0.751
4 th year	8.13	3.62-18.22	0.000*
5 th year	6.75	2.76-16.54	0.000*
Graduate	4.76	15.11-109.96	0.000*
Level of study			
Undergraduate	Ref.		
Graduate	24.77	9.64-63.62	0.000*
Major type			
Health-related	5.49	3.52-8.56	0.000*
Non-health related	Ref.		
Income			
Middle	0.36	0.18-0.73	0.005*
High+Low	Ref.		
Heard about HPV			
Yes	9.64	5.94-15.66	0.000*
No	Ref.		
Heard about HPV vaccine			
Yes	8.95	5.59-14.33	0.000*
No	Ref.		
Sexual life			
Yes	2.03	1.27-3.23	0.003*
No	Ref.		
Sexual partner			
Yes	2.01	1.17-3.47	0.012*
No	Ref.		
Contraception			
Yes	1.85	1.12-3.06	0.016*
No	Ref.		
Test STI			
Yes	5.84	2.94-11.56	0.000*
No	Ref.		
Alcohol consumption			
Yes	2.81	1.77-4.47	0.000*
No	Ref.		

Table 14

Adjusted odds ratios of knowledge score on HPV and HPV vaccination.

Variable	OR	CI	p-Value
Age			
<21	Ref.		
≥21	3.79	2.43-5.93	0.000*
Level of study			
Undergraduate	Ref.		
Graduate	2.80	0.84-9.25	0.092
Major type			
Health-related	1.33	0.70-2.53	0.381
Non-health related	Ref.		
Income			

Middle	0.31	0.13-0.75	0.009*
High+Low	Ref.		
Heard about HPV			
Yes	2.26	1.15-4.45	0.018*
No	Ref.		
Heard about HPV vaccine			
Yes	2.64	1.35-5.17	0.004*
No	Ref.		
Sexual life			
Yes	1.17	0.27-5.01	0.832
No	Ref.		
Sexual partner			
Yes	0.80	0.24-2.69	0.715
No	Ref.		
Contraception			
Yes	0.50	0.12-2.19	0.355
No	Ref.		
Test STI			
Yes	1.42	0.54-3.70	0.477
No	Ref.		
Alcohol consumption			
Yes	2.17	1.08-4.33	0.029*
No	Ref.		

Table 12

Crude odds ratios of attitude score on HPV vaccination.

Variable	OR	CI	p-Value
Heard about HPV			
Yes	1.64	1.10-2.45	0.015*
No	Ref.		
Heard about HPV vaccine			
Yes	1.74	1.15-2.64	0.009*
No	Ref.		
Smoking status			
Yes	0.35	0.18-0.72	0.004*
No	Ref.		

Table 15

Adjusted odds ratios of attitude score on HPV vaccination

Variable	OR	CI	p-Value
Heard about HPV			
Yes	0.34	0.17-0.69	0.003*
No	Ref.		
Yes	1.54	0.88-2.69	0.134
No	Ref.		
Smoking status			
Yes	0.34	0.74-2.18	0.381
No	Ref.		

Table 13

Crude odds ratios of intention score to receive HPV vaccination

Variable	OR	CI	p-Value
Age			
<21	Ref.		
≥21	11.34	6.93-18.59	0.000*
Year of study			
1 st year	Ref.		
2 nd year	1.55	0.92-2.61	0.096
3 rd year	0.77	0.28-2.12	0.613
4 th year	3.59	1.67-7.75	0.001*
5 th year	1.80	0.78-4.15	0.171
Graduate	7.48	3.67-15.26	0.000*
Level of study			
Undergraduate	Ref.		
Graduate	5.51	2.83-10.74	0.000*
Major type			
Health-related	2.02	1.33-3.06	0.001*
Non-health related	Ref.		
Academic Performance			
Excellent	0.58	0.37-0.91	0.019*
Good+Satisfactory	Ref.		
Income			
Middle	0.96	0.48-1.90	0.898
High+Low	Ref.		
Heard about HPV			
Yes	4.00	2.62-6.09	0.000*
No	Ref.		
Heard about HPV vaccine			
Yes	2.12	1.40-3.22	0.000*
No	Ref.		
Sexual life			
Yes	2.63	1.62-4.25	0.000*
No	Ref.		
Sexual partner			
Yes	2.39	1.36-4.21	0.003*
No	Ref.		
Contraception			
Yes	2.80	1.64-4.76	0.000*
No	Ref.		
STI			
Yes	4.38	1.22-15.76	0.024*
No	Ref.		
Test STI			
Yes	4.52	2.24-9.11	0.000*
No	Ref.		
Alcohol consumption			
Yes	2.80	1.74-4.49	0.000*
No	Ref.		

Table 16

Adjusted odds ratios of intention score to receive HPV vaccination.

Variable	OR	CI	p-Value
Age			
<21	Ref.		
≥21	1.59	0.84-2.98	0.153
Level of study			
Undergraduate	Ref.		
Graduate	2.21	0.88-5.53	0.090
Major type			
Health-related	0.81	0.45-1.46	0.480
Non-health related	Ref.		
Academic Performance			
Excellent	0.51	0.31-0.86	0.011*
Good+Satisfactory	Ref.		
Income			
Middle	0.96	0.48-1.90	0.898
High+Low	Ref.		
Heard about HPV			
Yes	4.25	2.23-8.11	0.000*
No	Ref.		
Heard about HPV vaccine			
Yes	0.45	0.23-0.87	0.019*
No	Ref.		
Sexual life			
Yes	1.54	0.46-5.13	0.484
No	Ref.		
Sexual partner			
Yes	0.66	0.23-1.85	0.424
No	Ref.		
Contraception			
Yes	1.29	1.64-4.76	0.000*
No	Ref.		
STI			
Yes	2.50	0.60-10.43	0.207
No	Ref.		
Test STI			
Yes	1.85	0.79-4.34	0.159
No	Ref.		
Alcohol consumption			
Yes	1.69	0.94-3.01	0.077
No	Ref.		

Appendix 3. Questionnaire (English, Kazakh, Russian)

Questionnaire 1. English version

Part 1: Social characteristics of the participants

Q1. What is your age? _____

Q2. What is your gender?

1. Male
2. Female

Q3. What is your nationality?

1. Kazakh
2. Russian
3. Other _____

Q4. At what level are you studying now?

1. 1st year undergraduate
2. 2nd year undergraduate
3. 3rd year undergraduate
4. 4th year undergraduate
5. 5th year undergraduate
6. Graduate (including, 6-7 year medical students)
7. Other (please, specify): _____

Q5. What is the field of your major?

1. Humanities
2. Social Sciences
3. Arts
4. Law
5. Engineering
6. Natural Sciences
7. Maths and Physics
8. Medicine
9. Pharmacy
10. Public Health
11. Other: _____

Q6. How would you assess your academic performance?

1. Excellent
2. Good
3. Satisfactory
4. Unsatisfactory

Q7. What is your perceived economic status?

1. High income
2. Middle income
3. Low income
4. Other (please specify): _____

Part 2: Awareness of physical health problems

Q8. How would you generally assess your current health status?

1. Excellent
2. Good
3. Satisfactory
4. Bad

Q9. What do you consider to be major health problems that may be experienced at your age?

Q10. What do you consider to be common reasons for getting a disease at your age?

Q11. Before taking this survey, have you ever heard of HPV (human papillomavirus)?

1. Yes
2. No

Q12. Before taking this survey, have you ever heard of HPV vaccine?

1. Yes
2. No (go to Q12)

Q13. If «Yes», what was the source that you hear from about the vaccine?

1. Media (advertisements, TV news, radio)
2. Internet
3. Doctor or Gynecologist
4. University lectures or Professors
5. Family
6. Friends
7. Others, please specify

Part 3: Questions on knowledge of HPV and HPV vaccination

	<i>True</i>	<i>False</i>	<i>Do not Know</i>
<i>Please mark only one correct answer in each of the statements below</i>			
<i>(Q14- Q25)</i>			
Q14. HPV can be transmitted through vaginal, anal, and oral sex as well as genital to genital contact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q15. Human papillomavirus can lead to genital warts (growths on the skin of the genitals)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q16. Human papillomavirus can cause herpes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q17. There are different types of HPV	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q18. HPV can cause cervical cancer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q19. All HPV types can cause cervical cancer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q20. Only females can be infected with HPV and show symptoms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q21. In most cases, HPV infected women do not show symptoms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q22. HPV can be transmitted from a carrier to his/her partner only if the carrier shows symptoms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q23. HPV vaccines have the same effect whether the female receive vaccination before or after being infected with HPV	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q24. HPV vaccine is best taken before the start of sexual activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q25. HPV vaccine can only be taken after the age of 18 years	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Part 4: Questions on attitudes towards HPV vaccination and HPV infection

For the following questions Q26-Q37 please, assess your agreement or disagreement with the following statements:

	<i>Strongly agree</i>	<i>Agree</i>	<i>Neither agree nor disagree</i>	<i>Disagree</i>	<i>Strongly disagree</i>
Q26. Based on my lifestyle, I believe that I have increased risk for the HPV infection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q27. I believe that there is a vaccine to prevent HPV	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q28. Based on my lifestyle, I believe that I would benefit from getting the vaccine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q29. I believe that Kazakhstani students have a good chance of contracting HPV	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q30. I believe that Kazakhstani students should receive the HPV vaccine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q31. I believe that contracting HPV virus is serious	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q32. I believe that contracting HPV can be life threatening	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q33. I believe that the current HPV vaccine is capable of preventing the occurrence of cervical cancer.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q34. I believe that the side effects of the vaccine are reasonable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q35. I believe that the side effects of the vaccine will not deter me from taking the vaccine.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q36. I believe that all gynecologists should recommend the vaccine to their patients					
Q37. I would recommend this vaccine for my female friends	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q38. On a scale of 1-10: 1 being least likely and 10 being most likely, how much are you willing now to get vaccinated with HPV vaccine ? (Please choose one number)

Least likely----->Most likely

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
----	----	----	----	----	----	----	----	----	-----

Part 5: Behavioral characteristics of the participants

Q39. Do you have a sexual life?

1. Yes
2. No

Q40. Do you have a constant sexual partner?

1. Yes, I am married
2. Yes, I am in a committed relationship
3. Yes, but I am not limited to only one sexual partner
4. No

Q41. What kind of contraception/birth control do you use?

1. Condoms
2. Birth Control pills
3. Ointments
4. Spiral
5. I do not use them
6. Other (please specify): _____

Q42. Have you ever had a sexually transmitted infection (STI) (e.g. HIV, herpes, gonorrhea, syphilis, hepatitis B and C)?

1. Yes
2. No

Q43. Have you ever had yourself tested for an STI (including an HPV test ?)

1. Yes
2. No

Q44. Do you think you maintain a healthy diet? (e.g. you eat a balanced meal of meat, vegetables and carbohydrates)

1. Yes
2. No

Q45. Do you smoke?

1. Yes, 1-5 cigarettes daily
2. Yes, 6-10 cigarettes daily
3. Yes, more than 10 cigarettes daily
4. I don't smoke

Q46. Do you consume alcohol?

1. Yes, 3-7 times a week
2. Yes, once a week
3. Yes, only on weekends and special occasions
4. I do not consume alcohol

Questionnaire 2. Kazakh version

1 Бөлім: Қатысушылардың әлеуметтік және демографиялық сипаттамалары

Q1. Жасыңызды көрсетіңіз: _____

Q2. Жынысыңызды белгілеңіз

1. Әйел
2. Ер адам

Q3. Ұлтыңыз қандай?

1. Қазақ
2. Орыс
3. Басқасы _____

Q4. Қазір сіз нешінші курста оқып жатырсыз?

1. 1-ші курс (бакалавр)
2. 2-ші курс (бакалавр)
3. 3-ші курс (бакалавр)
4. 4-ші курс (бакалавр)
5. 5-ші курс (бакалавр)
6. Магистратура студенті (6-7 курс медицина студенті)

Q5. Сіздің мамандығыңыз қандай?

1. Гуманитарлық ғылымдар
2. Әлеуметтік ғылымдар
3. Өнер
4. Заң
5. Инжиниринг
6. Жаратылыстану ғылымдары
7. Математика және физика
8. Медицина
9. Қоғамдық денсаулық сақтау
10. Фармацевтика бөлімі
11. Басқасы

Q6. Үлгеріміңізді қалай бағалайсыз?

1. Өте жақсы
2. Жақсы
3. Қанағаттанарлық
4. Қанағаттанарлықсыз

Q7. Сіз экономикалық жағдайыңызды қалай бағалайсыз?

1. Жоғары табыс
 2. Орташа табыс
 3. Төмен табыс
 4. Басқасы (анықтап беріңіз):
-

2 Бөлім: Денсаулыққа қатысты физикалық мәселелер туралы хабардарлық

Q8. Қазіргі денсаулығыңыздың жағдайын жалпы қалай бағалар едіңіз?

1. Өте жақсы
2. Жақсы
3. Қанағаттанарлық
4. Нашар

Q9. Денсаулыққа қатысты Сіздің жасыңызда болуы мүмкін, қандай мәселелерді қарастыра аласыз?

Q10. Сіздің жасыңызда ауырып қалудың жалпы себептері қандай?

Q11. Осы сауалнаманы өткізмес бұрын, сіз АПВ (адамның папиллома вирусы) туралы естідіңіз бе?

1. Ия
2. Жоқ

Q12. Осы сауалнамаға дейін, сіз АПВ қарсы вакциналау туралы естідіңіз бе?

1. Ия
2. Жоқ (12ші сұраққа барыңыз)

Q13. Алдыңғы сұраққа жауабыңыз «иә» болса, вакциналау туралы қай ақпарат дереккөзінен естідіңіз?

1. БАҚ (жарнама, теледидар жаңалықтары, радио)
 2. Ғаламтор
 3. Дәрігер немесе гинеколог
 4. Университет дәрістері немесе профессорлар
 5. Отбасы
 6. Достар
 7. Басқалар, (анықтап беріңіз):
-

2 Бөлім: АПВ және АПВ вакциналау туралы хабардарлық бойынша сұрақтар

<i>Әр пікірдің тұсындағы бір жауапты шеңбермен Белгілеңіз</i>	<i>Дұрыс</i>	<i>Дұрыс емес</i>	<i>Білмеймін</i>
Q14. АПВ вагиналды, анал және ауыз жыныстық қатынаспен, сондай-ақ жыныстық органдар байланысу арқылы таратылуы мүмкін	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q15. Адам папиллома вирусы жыныстық сүйелдер (жыныс мүшелерінің терісіндегі өсулер) қалыптасынуына әкелуі мүмкін	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q16. Адам папиллома вирусы герпесті тудыруы мүмкін	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q17. АПВ-ның әртүрлі түрлері бар	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q18. АПВ жатыр мойны обырын тудыруы мүмкін	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q19. Барлық АПВ-ның түрлері жатыр мойны обырына себеп болуы мүмкін	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q20. Тек қана әйелдер АПВ-н жұқтырып, ауру белгілерін көрсете алады	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q21. Көп жағдайларда, АПВ инфекциясы бар әйелдерде, ауру белгілері байқалмайды	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q22. Ауру таратқышында ауру белгісі болғанда ғана АПВ оның серіктесіне жұғуы	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q23. Әйел вакцинаны АПВ жұқтырғаннан бұрын немесе одан кейін қабылдаса да, вакцинаның әсері екі жағдайда да бірдей болады	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q24. АПВ вакцинасы жыныстық белсенділіктің басталуына дейін жақсы қабылданады	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q25. АПВ вакцинасы 18 жастан кейін ғана қабылданады	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4 Бөлім: АПВ вакциналауына және АПВ инфекциясына қатысты көзқарастар

26-37 сұрақтар үшін төмендегі пікірлермен келісетініңізді не келіспейтініңізді бағалауыңызды сұраймыз:

	<i>Толық тай келісе мін</i>	<i>Келіс емін</i>	<i>Жауап беруге қиналамы н</i>	<i>Келіспе ймін</i>	<i>Толық тай келіспе ймін</i>
Q26. Өмір салтымды ескеретін болсам; АПВ-ның жұғуының жоғары қаупі бар дер ойлаймын	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q27. АПВ-ның алдын-алу үшін вакцина бар деп ойлаймын	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q28. Өмір салтымды ескеретін болсам; мен вакцина алудан пайда көретініме сенемін	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q29. Менің ойымша, қазақстандық студенттер АПВ инфекциясын жұқтыруға қаупі бар деп ойлаймын	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q30. Менің ойымша, қазақстандық студенттер АПВ вакцинасын алуға тиіс	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q31. Менің ойымша, АПВ вирусын жұқтырып алу өте қатерлі	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q32. Менің ойымша, АПВ вирусын жұқтырып алу өмірге қауіпті болуы мүмкін	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q33. Менің ойымша, қазіргі АПВ-ға қарсы вакцинасі жатыр мойны обырының пайда болуына кетергі жасайды	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q34. Вакцинаның қосалқы әсерлері ақылға қонымды деп есептеймін	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q35. Вакцинаның қосалқы әсерлері маған вакцина қабылдауға кедергі келтірмейді деп ойлаймын	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q36. Менің ойымша, барлық гинекологтар өз пациенттеріне вакцинаны ұсынуы керек	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q37. Мен бұл вакцинаны барлық әйел достарыма ұсынар едім	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q38. 1-10 шкаласы бойынша (1 ең ықтималсыз және 10 ең ықтималды) сіз қазір АПВ вакцинасына қаншалықты дайынсыз? (Бір нөмірді таңдаңыз)

ең ықтималсыз -----ең ықтималды

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
----	----	----	----	----	----	----	----	----	-----

5 Бөлім: Қатысушылардың мінез-құлық сипаттамалары

Q39. Сіздің өміріңізде жыныстық қатынастар бар ма?

1. Ия
2. Жоқ

Q40. Сізде тұрақты жыныстық серіктесіңіз бар ма?

1. Ия, мен үйленген адаммын
2. Ия, мен адал қарым-қатынастамын
3. Ия, бірақ мен тек бір жыныстық серіктеспен шектелмеймін
4. Жоқ (41 сұраққа барыңыз)

Q41. Сіз қандай контрацепцияны қолданасыз?

1. Презерватив
2. Дәрі
3. Спираль
4. Жақпа
5. Мен пайдаланбаймын
6. Басқасы (анықтаңыз)

Q42. Сізде жыныстық жолмен берілетін инфекция (ЖЖБИ) (ВИЧ, герпес, гонорея, сифилис, В және С гепатиті) болды ма?

1. Ия
2. Жоқ

Q43. Сіз ЖЖБИ тестілерінен өттіңіз ба? (оның ішінде АПВ тесті)

1. Ия
2. Жоқ

Q44. Сіз дұрыс тамақтануды сақтаймын деп ойлайсыз ба? (ет, көкөніс және көмірсуларды өлшерлеп тамақтану)

1. Ия
2. Жоқ

Q45. Сіз темекі шегесіз бе?

1. Иә, күнделікті 1-5 темекі
2. Ия, күнделікті 6-10 темекі
3. Ия, күніне 10-нан астам темекі
4. Мен темекі шекпеймін

Q46. Алкогольді сусындарды ішесіз бе?

1. Ия, аптасына 3-7 рет
2. Ия, аптасына бір рет
3. Ия, демалыс күндері және ерекше жағдайларда ғана
4. Мен алкогольді сусындарды ішпеймін

Questionnaire 3. Russian version

Раздел 1: Социально -демографическое характеристики участников

Q1. Сколько вам лет? _____

Q2. Укажите свой пол

1. Мужской
2. Женский

Q3. Ваша национальность?

1. Казах (казашка)
2. Русский (русская)
3. Другое _____

Q4. На каком курсе вы сейчас учитесь?

1. 1 курс бакалавриата
2. 2-й курс бакалавриата
3. 3-й курс бакалавриата
4. 4-й курс бакалавриата
5. 5- й курс бакалавриата
6. Магистрант (в том числе, студенты-медики 6-7 курса)
7. Другое (пожалуйста, поясните): _____

Q5. Выберите свою специальность

1. Гуманитарные науки
2. Социальные науки
3. Искусства
4. Закон
5. Инженерия
6. Естественные науки
7. Математика и физика
8. Общая медицина
9. Фармацевтическое дело
10. Общественное здравоохранение
11. Другое (пожалуйста, поясните): _____

Q6. Как вы оцениваете свою успеваемость?

1. Отлично
2. Хорошо
3. Удовлетворительно
4. Неудовлетворительно

Q7. В какую экономическую категорию, по вашему мнению вы себя относите?

1. Высокий уровень дохода
2. Средний уровень дохода
3. Низкий уровень дохода
4. Другое(пожалуйста, укажите): _____

Раздел 2: Осведомленность о физических проблемах со здоровьем

Q8. Как бы Вы в целом оценили свое нынешнее состояние здоровья?

1. Отличное
2. Хорошее
3. Удовлетворительное
4. Плохое

Q9. Что вы считаете серьезными проблемами со здоровьем, которые характерны в вашем возрасте?

Q10. Что вы считаете общими причинами для получения заболевания в вашем возрасте?

Q11. Перед проведением этого опроса вы когда-нибудь слышали о ВПЧ (Вирусе Папиломы Человека)?

1. да
2. нет

Q12. Перед тем, как принять этот опрос, вы когда-нибудь слышали о вакцине против ВПЧ?

1. да
2. нет (перейдите к Q14)

Q13. Если «да», то с какого источника вы слышали о вакцине?

1. сми (реклама, телевизионные новости, радио)
2. интернет
3. врач или гинеколог
4. университетские лекции или профессора
5. семья
6. друзья
7. другое (пожалуйста, укажите): _____

Раздел 3: Вопросы об осведомленности о ВПЧ и вакцинации против ВПЧ

<i>Отметьте один из ответов в каждом утверждении (Q14- Q25)</i>	<i>Верно</i>	<i>Не верно</i>	<i>Не знаю</i>
Q14. ВПЧ можно передавать через вагинальный, анальный и оральный секс, а также через контакт половых органов	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q15. ВПЧ может привести к развитию генитальных бородавок (нарост на коже гениталий)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q16. ВПЧ может привести к возникновению герпеса	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q17. Существуют различные виды ВПЧ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q18. ВПЧ может вызвать рак шейки матки	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q19. Все типы ВПЧ могут вызывать рак шейки матки	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q20. Только женщины могут быть инфицированы ВПЧ и проявлять симптомы	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q21. В большинстве случаев инфицированные ВПЧ женщины не проявляют симптомов	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q22. ВПЧ может передаваться от переносчика к его / ее партнеру, только если переносчик обнаруживает симптомы	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q23. Вакцины против ВПЧ имеют тот же эффект, независимо от того, получают ли женщины вакцинацию до или после инфицирования ВПЧ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q24. Вакцину против ВПЧ лучше всего принимать до начала половой жизни	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q25. Вакцина против ВПЧ может приниматься только после 18 лет	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Раздел 4: Вопросы об отношении к инфекции ВПЧ и вакцинации против ВПЧ

Для вопросов Q26-Q37 оцените, пожалуйста, свое согласие либо несогласие со следующими утверждениями:	Полностью согласен	Согласен	Затрудняюсь ответить	Не согласен	Полностью не согласен
Q26. Основываясь на моем образе жизни, я считаю, что у меня повышенный риск заражения ВПЧ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q2. Я считаю, что существует вакцина против ВПЧ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q28. Основываясь на моем образе жизни, я считаю, что я получу пользу от вакцинации	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q29. Я считаю, что казахстанские студенты имеют хорошие шансы заразиться ВПЧ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q30. Я считаю, что казахстанские студенты должны получать вакцину против ВПЧ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q31. Я считаю, что заражение вирусом ВПЧ является серьезным	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q32. Я считаю, что заражение ВПЧ может стать угрозой для жизни	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q33. Я считаю, что нынешняя вакцина против ВПЧ способна предотвратить появление рака шейки матки	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q34. Я считаю, что побочные эффекты вакцины приемлемы	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q35. Я считаю, что побочные эффекты вакцины не удержат меня от принятия вакцины	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q36. Я считаю, что все гинекологи должны рекомендовать вакцину своим пациентам	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q37. Я бы порекомендовал эту вакцину для моих друзей	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q38. По шкале от 1 до 10: 1 наименее вероятно, а 10 - наиболее вероятно, насколько вы готовы сейчас принять вакцинацию против ВПЧ? (Выберите один номер)
наименее вероятно----->наиболее вероятно

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
----	----	----	----	----	----	----	----	----	-----

Раздел 5: Поведенческие характеристики участников

Q39. Вы живете половой жизнью?

1. да
2. нет

Q40. У вас есть постоянный сексуальный партнер?

1. да, я женат
2. да, я состою в отношениях
3. да, но я не ограничиваюсь только одним сексуальным партнером
4. нет

Q41. Какой вид контрацепции вы используете?

1. презервативы
2. противозачаточные таблетки
3. спираль
4. мазь
5. я не использую
6. другое(пожалуйста, укажите): _____

Q42. Имели ли вы когда-либо инфекцию, передающуюся половым путем (ИППП) (например, ВИЧ, герпес, гонорея, сифилис, гепатит В и С)?

1. да
2. нет

Q43. Проходили ли вы когда-либо тестирование на ИППП (включая тест на ВПЧ)?

1. да
2. нет

Q44. Как вы думаете, вы поддерживаете здоровую диету? (например, вы едите сбалансированную пищу из мяса, овощей и углеводов)

1. да
2. нет

Q45. Вы курите?

1. да, 1-5 сигарет ежедневно
2. да, 6-10 сигарет ежедневно
3. да, более 10 сигарет ежедневно
4. я не курю

Q46. Вы употребляете алкоголь?

1. да, 3-7 раз в неделю
2. да, раз в неделю
3. да, только по выходным и специальным случаям
4. я не употребляю алкоголь

Appendix 4. Consent form (English, Kazakh, Russian)

Consent form 1. English version

Verbal Informed Consent

Study Title: Knowledge and perception on human papillomavirus infection and vaccination among students of a university in Astana.

Advisors: Azliyati Azizan, Raushan Alibekova

I am Master of Public Health student in the Department of Public Health at the School of medicine at Nazarbayev University. This study will look at the topic of knowledge and awareness about HPV infection and attitudes towards HPV vaccination.

Before we begin, let me describe what this study involves. After I've described the study to you, you can decide whether or not you would like to participate.

I am conducting a survey to determine knowledge, awareness, and perception of human papillomavirus infection and vaccination. Moreover, the goal is to investigate the knowledge and awareness of HPV infection, attitudes towards HPV vaccination among university students and their intent to receive the HPV vaccine. I want to conduct this research among medical and non-medical students of Astana. This study is important as it will allow knowing the current state of knowledge and attitudes regarding HPV among students.

Participation should take about 15 minutes. Participation is voluntary. You will be asked to fill out the questionnaire with 46 questions. There are no risks expected that are greater than you would normally encounter in your daily life. Your participation will benefit my study. I will use this information obtained from you only for the purpose of the research. Your individual data will not be associated with your name in any way and will be kept confidential.

You will not be penalized in any way for deciding to stop participation at any time. If at any time you would like to stop participating, please tell me. We can take a break, stop and continue at a later date, or stop altogether.

You will not receive any financial rewards for participating. However, you will make a great contribution for this research by participating in it.

Do you have any questions? If you have questions later, you may contact the investigator, Master of Public Health student at the School of Medicine of Nazarbayev University.

Are you interested in participating in this study?

YES []

NO []

Participants Identification Code (not name):

Date:

Time:

Investigator: Torgyn Shokanbayeva

Contact Information: 8-701-9512565, tshokanbaeva@nu.edu.kz

Verbal consent 2. Kazakh version

Ауызша негізделген келісім

Зерттеу тақырыбы: Астана Студенттерінің Адам Папиллома Вирусы (АПВ) тұралы біліктілігі және АПВ вакциналауына көзқарасы

Ғылыми жетекшілер: Әзлияти Әзизан, Раушан Әлібекова

Мен Назарбаев Университетіндегі Медицина Мектебінің қоғамдық денсаулық сақтау кафедрасының магистра студентімін. Бұл зерттеу АПВ инфекциясы туралы және АПВ вакциналауына қатысты көзқарастар туралы білімді және хабардарлықты қарастырады.

Бастамас бұрын, осы зерттеудің қысқаша сипаттамасын берейін. Сипаттама бергеннен кейін, сіз осы зерттеуге қатысу туралы шешім қабылдай аласыз. Зерттеудің мақсаты – Астанадағы студенттер арасында АПВ тұралы біліктілікті өлшеу және АПВ вакциналауына көзқарасын анықтау. Қазіргі таңда АПВ Қазақстан үшін медициналық және әлеуметтік жалпы мәселе болып саналады. Осы зерттеу студенттердің АПВ және АПВ вакциналауға қатысты сауаттылығын арттыру, сондай-ақ студенттердің денсаулығы мен амандығын жақсарту үшін одан әрі даму салаларын анықтауға көмегін тигізеді деген үміттеміз. Осы тақырыпқа қатысты Сіздің пікіріңіз біз үшін өте маңызды.

Сіз осы зерттеуге қатысу үшін кездейсоқ іріктеу әдісімен таңдалдыңыз. Осы сауалнаманы толтыруыңызды сұраймын. Толық құпиялылық және анонимдік сақталатынына кепілдік беремін, Сіздің жауаптарыңыз тек зерттеу мақсаттарында жалпыланған түрінде пайдаланылатын болады. Сауалнамада 46 сұрақ бар және оның ұзақтығы 15 минуттан аспайды. Сіздің аты-жөнінің анықталмайды және барлық ақпарат жасырын. Сізден атыңызды жазуыңыз немесе құжатқа қол қоюыңыз сұралмайды.

Бұл жоба сізге минималды тәуекел туғызады. Егер, қандай бір сұраққа жауап беру ыңғайсыздық туғызса, сұрақты аттып немесе сауалнамаға қатысудан бас тартуға болады.

Сіз осы зерттеуге қатысуға қызығасыз ба?

ИӘ []

ЖОҚ []

Қатысушылардың сәйкестендіру коды (аты емес):

Күні:

Уақыты:

Зерттеуші: Торғын Шоқанбаева

Байланыс ақпараты: 8-701-9512565, tshokanbaeva@nu.edu.kz

Verbal consent 3. Russian version

Устное информированное согласие

Название исследования: **Осведомленность и восприятие инфекции папилломавируса человека и вакцинации среди студентов г. Астана.**

Научные руководители : Азлияти Азизан, Раушан Алибекова

Я студентка факультета общественного здравоохранения при Медицинской школе Назарбаев Университета. В этом исследовании будет рассмотрена тема знаний и осведомленности о ВПЧ-инфекции и отношение к вакцинации против ВПЧ.

Прежде чем мы начнем, позвольте мне описать, что включает в себя это исследование. После того, как я расскажу вам об этом исследовании, вы можете решить, хотите ли вы принять участие.

Я провожу опрос, чтобы определить знания, осведомленность и восприятие инфекции и вакцинации против папилломавируса человека. Кроме того, целью этого опросника является исследование знаний и осведомленности о ВПЧ-инфекции, отношение к вакцинации против ВПЧ среди студентов университетов и их намерение получить вакцину против ВПЧ. Я хочу провести это исследование среди медицинских и немедицинских студентов Астаны. Это исследование имеет важное значение, поскольку оно позволяет узнать текущее состояние знаний и отношение к ВПЧ среди учащихся.

Участие займет около 15 минут. Участие является добровольным. Вас попросят заполнить анкету с 46 вопросами. Нет никаких ожидаемых рисков, которые бы были выше, чем вы обычно встречали в своей повседневной жизни. Ваше участие принесет пользу моему исследованию. Я буду использовать информацию, полученную от вас, только для целей исследования. Ваши личные данные не будут связаны с вашим именем каким-либо образом и будут сохранены в конфиденциальности.

Вы никоим образом не будете наказаны за принятие решения о прекращении участия в любое время. Если в любое время вы хотите прекратить участвовать, пожалуйста, скажите мне. Мы можем сделать перерыв, остановиться и продолжить позже, или вообще остановиться.

Вы не получите никаких финансовых вознаграждений за участие. Тем не менее, вы внесете большой вклад в это исследование, участвуя в нем.

У вас есть вопросы? Если у вас есть вопросы позже, вы можете обратиться к исследователю, магистранту факультета общественного здравоохранения в Медицинскую школу Назарбаев Университета.

Вы заинтересованы в участии в этом исследовании?

ДА []

НЕТ []

Идентификационный код участников (не название):

Дата:

Время:

Исследователь: Торгын Шоканбаева

Контактная информация: 8-701-9512565, tshokanbaeva@nu.edu.kz