

ORIGINAL ARTICLE / ОРИГИНАЛНИ РАД

Creating social marketing strategy on the internet within preventive health care – human papilloma virus vaccination campaign

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SUMMARY

Introduction/Objective The main aim of the paper is to develop a foundation for creating internet social marketing strategy in preventive health care, through research and campaign for vaccination against human papillomavirus (HPV).

The aim of the study was to introduce a strategic approach of social marketing on social networks, for vaccination against HPV campaign in Serbia.

Methods Quantitative research was conducted through the internet in December of 2016, using the survey method. Participants in the study were parents whose children were candidates for the vaccination.

Results The research has shown that nearly one third of respondents do not know what HPV is, and about the same number of respondents know that HPV causes cancer. In addition, only 14.5% of respondents know that HPV is the most common transmitted disease in the world. With adequate awareness of safety, 97% of respondents would decide to vaccinate their children. Only 39% of parents could afford the vaccination, although opinion change is caused by the information about the price of the HPV vaccine. Consequently, 97.5% of the respondents would opt for vaccination in the case that it is free.

Conclusion Based on the results, and compared with best practices of other countries, we provided a marketing strategy via social networks. The campaign focuses on the raising awareness of the need for HPV vaccination and cancer prevention, including disseminating information to the target population, through social networks.

Keywords: human papillomavirus; vaccination; prevention; social marketing; strategic marketing on the internet

INTRODUCTION

Practical experience and evidence of health promotion programs, campaigns, and national strategies for key disease groups, such as HPV virus infection, have increased throughout Europe. Enhancing social behavioral research could provide a larger basis of evidence, as the foundation for actions in prevention. Start-up guidance through programs and campaigns for the prevention of human papillomavirus (HPV), through vaccination, is especially important for young people.

There are two basic groups gathered around the interest – the fight against HVP. The first group is teenagers, during the period of maturity for vaccination, and the second group is the parents of those teenagers, who have the need and responsibility to protect their children. For young people, programs for the prevention of HVP infection can include peer education, inclusion of youth organizations, and school health literacy programs. However, more significant effects could be achieved through social networks.

HPV infection is the most important risk factor and a necessary condition for the development of cervical cancer [1]. In Serbia, an average of 482 women die of cervical cancer each year, based on the estimates of the International Agency for Research on Cancer and the European Network of Registries for Cancer, Serbia remains in the group of European countries with the highest rates of illness and dying from cervical cancer.

HPV is also responsible for more than 90% of cases of colon cancer, 71% of cancer of the genital organs in both sexes, and 72% of cases of lung and throat cancer, according to the US National Cancer Institute. To date, more than 120 types of HPV have been identified. Some of them (about 40 types of viruses) are sexually transmitted and lead to infection of sex organs and the anogenital region of both women and men [2].

HPV is so widespread that most adults (about 70% of people) have had an HPV infection in their lifetime. Primary HPV infection usually does not exhibit any symptoms and most people create antibodies without being aware that they

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have been infected. In some cases, HPV infection can be maintained without any symptoms for many years. It is therefore very difficult to say with certainty when and how the infection occurred.

A study of 194 studies involving over one million women with normal cytology showed that the global prevalence of HPV infection in the world was 11.7% [3]. At younger ages, it is very high and reaches the peak at 20–25 years. In most women infected with HPV, the immune system will generate antibodies and overcome viral infection within 6–24 months to create antibodies and to overcome viral infection. Spontaneous disappearance of the infection occurs in about 85–90% of cases, which is confirmed by the low prevalence of latent HPV infection in women over 30 years of age [4]. In a small number of women, the infection persists (10–15%), and this occurs mainly when it is caused by high-risk HPV types [5].

There are several ways to prevent the HPV infection. This includes vaccination against HPV, change in sexual behavior, smoking prevention, and other health education activities. In this study, the focus of research relates to the vaccination against HPV. In Serbia, the 2020 Health Policy supports sustained efforts to combat infectious diseases such as HPV. So far, there have been no vaccine advocacy campaigns against HPV in Serbia, but have been implemented for many years in developed countries of the world.

The use of HPV vaccines prevents the emergence of persistent infection, precancerous changes, and malignancies caused by certain types of HPV. Based on data on the high incidence of HPV infection and the high risk of developing an infection immediately after starting sexual activity, the highest level of protection is achieved by the use of the vaccine before the onset of sexual activity. For this reason, vaccination is recommended at the age of 10–14 years. The vaccine is not recommended for girls younger than nine years, because in this group the immunogenicity and efficacy of the vaccine have not been investigated. Vaccine efficacy in women over 26 years of age has not been confirmed and additional research is ongoing. High protection is achieved by immunization in women of the age of 14 or 15 to 26 years if they have not started sexual activity [6]. From the introduction of the vaccine in Europe in 2006, the girls were at the center of attention. However, the question of the usefulness of the vaccine for boys was also raised – only the effectiveness of Gardasil vaccine was evaluated and the results showed it to be as effective as it is for girls, if not more so.

At the moment, there are two vaccines – Gardasil (Merck & Co., Kenilworth, NJ, USA) and Cervarix (GlaxoSmith-Kline plc., London, UK). According to the European Centre for Disease Prevention and Control report, both vaccines protect against high-risk types of HPV 16 and 18, which are believed to be cancer susceptors in 73% of cases in Europe. Gardasil, in addition, protects against HPV types 6 and 11, which are the most common causes of condyloma of the genital organs. Vaccines are given in three doses within six months. Both vaccines are registered in Serbia, but the Health Insurance Fund does not cover them; they are quite

expensive for ordinary citizens, and not easily obtained in clinics and pharmacies.

The role of parents and health workers is crucial, as the vaccine is not mandatory, and parents' approval is required. Of the 29 European Union member states, Norway, and Iceland, vaccination against HPV is carried out in 19 countries. The rate of vaccination, however, is uneven and ranges 17–84%. A full coverage of over 80% was in Portugal and the UK in 2010.

The governments of the European Union countries, as well as the government of Serbia, currently only spend a small part of the health budget for health promotion and disease prevention – around 3% [7]. According to Serbia's current Strategy for Health Development until Year 2020, real health benefits can be achieved at affordable costs and within resource constraints if effective strategies are adopted.

The main objective of the study is to develop a foundation for the promotional strategy for increasing public awareness of the capabilities, significance, and safety of HPV prevention through immunization. The specific aims of the study were to determine the correlation between the knowledge about HPV virus and decisions of parents to vaccinate their children, as well as to determine whether the price of the vaccine is a significant factor that affects parents to vaccinate their children.

METHODS

Participants

The population for this research were parents with children up to 15 years of age. The sample comprised 200 participants, representatives of the general population of Serbia. The survey involved 172 women (86%) and 28 men (14%).

Twenty-one percent of the respondents had only one child, 72% had two children, and only 7% had three children. The total number of children is 228, of which 126 boys (55.26%) and 102 girls (44.74%).

Methods

In this research we applied quantitative research using a survey method. The instrument used for this research was the questionnaire given in Appendix A. The questionnaire contains 15 questions. The role of the first group of three questions was to collect demographic data. The next six questions were designed to examine the participants' familiarity with different aspects of HPV. The last group of six questions was intended to collect data on intentions of parents to vaccinate their children.

Data collection was performed using the online questionnaire, which was uploaded to Google Drive. The link to the questionnaire was forwarded to the parent sample, set to the active forums.

The sample in this study had characteristics similar to those in the population. In addition, it was a stratified sample, since it was derived from the target population as a subset of the baseline, according to the criteria of the posi-

Appendix A RESEARCH QUESTIONNAIRE

- | | | |
|--|-------|----|
| 1. Male or Female: | M | F |
| 2. Number of children (male or female): | _____ | |
| 3. How old are the children: | _____ | |
| 4. Do you know what HPV virus is? | Yes | No |
| 5. Do you know that HPV is the most common reason for diseases in the world? | Yes | No |
| 6. Do you know that HPV virus has direct impact on triggering malignant diseases? | Yes | No |
| 7. Do you know that HPV virus can cause cervical cancer in women, as well as cancer in men? | Yes | No |
| 8. Do you know that HPV virus is the key cause for intimacy diseases in women and men? | Yes | No |
| 9. Scientific research has proved that HPV vaccine is efficient in preventing diseases. In that way you can protect your children. Do you know that? | Yes | No |
| 10. More than 57 million doses of HPV vaccine have been distributed to date and all reports note their usefulness – would your decision be to vaccinate your children? | Yes | No |
| 11. Would you vaccinate your children if it were possible to do so free of charge in Serbia? | Yes | No |
| 12. Would you decide to vaccinate your children even if the price were €300 per treatment (three are needed)? | Yes | No |
| 13. Would you decide to vaccinate your children if the price were lower? | Yes | No |
| 14. Do you think that the price for HPV vaccination in Serbia is too high? | Yes | No |
| 15. In your opinion, which price level for the HPV vaccine is too high? | | |
| • 20,000–30,000 RSD | | |
| • 10,000–20,000 RSD | | |
| • 5,000–10,000 RSD | | |
| • 1,000–5,000 RSD | | |
| • < 1,000 RSD | | |

tion of the HPV vaccination decision-maker. Sampling was conducted without the probability, and the sample elements were selected based on the researchers' own estimates. The research sample was an intentional pattern; it represents a basic set, which in turn represents the optimal model used in this kind of pilot studies.

The research was done in accord with standards of the institutional committee on ethics.

RESULTS

As much as 62% (124) of the respondents responded affirmatively to the question, *Do you know what HPV is?* Only 14.5% (29) of those surveyed knew that HPV is the most communicable disease in the world; 34.5% of the respondents answered affirmatively to the question, *Do you*

know that HPV virus is a direct cause of certain carcinogens? However, only 15% (30) of the respondents knew that HPV can cause cervical, vaginal, and vulvar cancer in women, penis cancer in men, and anus and mouth or throat cancer, as well as colorectal cancer in both sexes; 22% (44) of the questioned parents knew that HPV is the main cause of condyloma in men and women.

With the knowledge that many years of scientific research have confirmed that HPV vaccine is very effective against the HPV types that cause cervical and conjunctival cancer, when asked if they would decide to vaccinate their child, as many as 94% (188) of the respondents answered affirmatively. Figure 2 shows different parameters that influence parents' decision to vaccinate their children.

With the knowledge that more than 57 million doses of HPV vaccine have been distributed to date without serious safety omissions, to the question whether they would

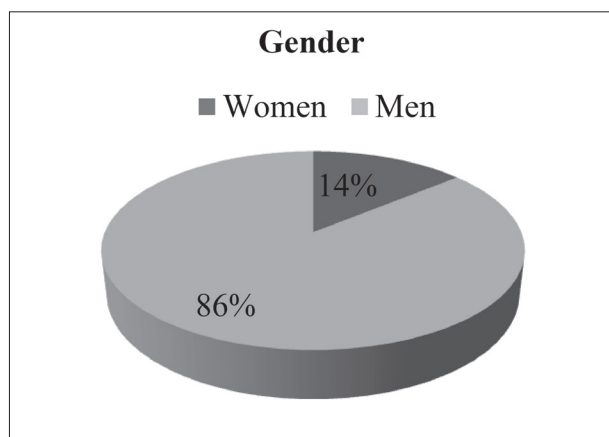


Figure 1. Gender structure of respondents

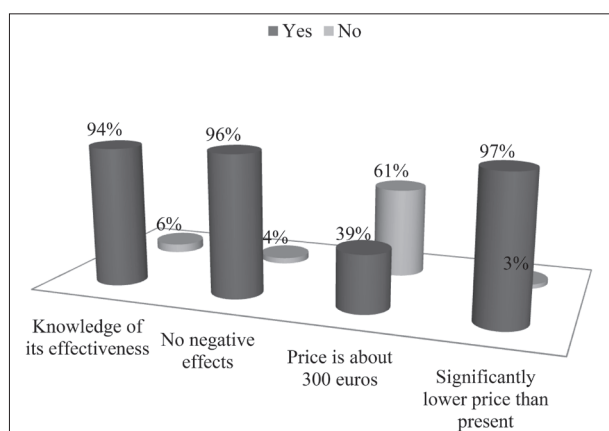


Figure 2. Decisions based on different parameters

decide to vaccinate their child, as many as 96.5% (193) of the respondents answered affirmatively. The same number of respondents would decide to vaccinate their child if there was a possibility of free HPV vaccination in Serbia.

The price of an HPV vaccine of about €300 (three necessary doses) inevitably impacts the decision on vaccinating one's child against the HPV virus; only 39% (78) of the parents decided in favor of the vaccination, which indicates that the price is too high and economically unacceptable, despite the parents' desire to vaccinate their children. As the confirmation of financial inability there was the question, *Would you have decided in favor of vaccination earlier if the price was significantly reduced from the existing one?*, to which 97.5% (195) of the respondents answered affirmatively. At the same time, as much as 93.5% (187) of the respondents considered that the current market price of HPV vaccines in Serbia is too high.

Table 1 presents different prices for the HVP vaccine and the percentages of participants which would accept different levels of prices for the vaccination of their child.

DISCUSSION

Aside from the significance of the HPV vaccine itself, vaccination in Serbia has only recently been applied. Also, to

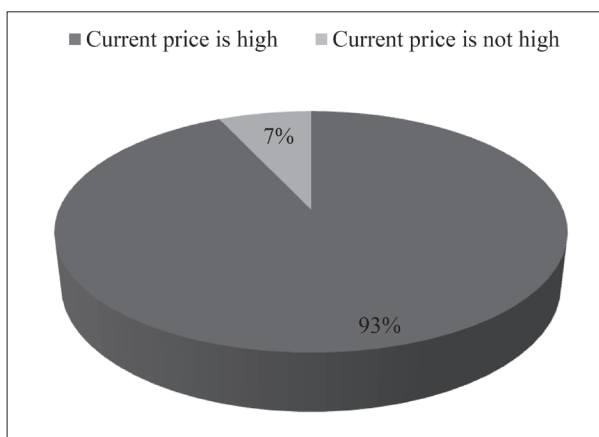


Figure 3. The percentage of respondents who believe that the current market price of HPV vaccines in Serbia is high

Table 1. Opinions of the respondents on the acceptability of the HPV vaccine price

Offered price	n	%
20,000–30,000 RSD	1	0.5
10,000–20,000 RSD	3	1.5
5,000–10,000 RSD	15	7.5
1,000–5,000 RSD	61	30.5
< 1,000 RSD	120	60

the best of our knowledge, a vaccination campaign against HPV has not been done in Serbia to date.

Our results suggest that knowledge on the importance of vaccination against HPV contributes to the willingness of parents to vaccinate their children. This is in accordance with other authors that recognize the importance of conducting campaigns with the main objective to raise awareness and readiness of parents to vaccinate their children [8]. For example, the major promoter of the HPV vaccination in Canada was the Society of Obstetricians and Gynecologists of Canada [8]. They used a website (hpvinfo.ca) as the main channel for communication in the HPV vaccination campaign. Throughout the website they provided all the necessary information to publicize the importance of HPV vaccination.

Similarly, our results evidenced that the cost of the vaccination process is one of the main obstacles for HPV vaccination in Serbia. Similar findings were reached by other authors, who concluded that the strongest influence on the acceptability of vaccination, besides the type of vaccine, is its cost [9, 10].

Some limitations of the present study should be acknowledged. First, we observed parents that vaccinated, and those who did not vaccinate their children together. Splitting those two samples would probably be useful to find out which were the main drivers that lead some parents to vaccinate their children, in addition to determining obstacles, such as the absence of knowledge and high costs. Also, we did not analyze cultural and social factors that could play a very important role in making a decision on vaccination.

CONCLUSION

HPV vaccine provides highly effective protection against cervical cancer and other HPV-induced diseases. The aim of the HPV vaccination campaign is to significantly reduce the incidence of malignancies caused by HPV infection through the promotion of public awareness of the possibilities, significance, and safety of prevention of the disease through immunization.

The basic principle of communication that is pursued through social networks is continuity. The advantage is a direct channel of communication with clearly defined target groups, with properly created messages. Campaigns implemented in this way give a detailed insight into the ratio

of invested resources and achieved results. The campaign focuses on developing awareness of the need for vaccination against HPV viruses, cancer prevention, including the spread of information through social networks such as Facebook, Tweeter, and YouTube to target populations.

The strategy of social marketing on the internet in preventive health care is an important segment of the overall communication of health care to the public. The specificity of the activity requires the authenticity of the approach, as well as the need for promotional campaigns and public advocacy of certain values in order to improve health.

Conflict of interest: None declared.

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Креирање друштвене маркетиншке стратегије на интернету у оквиру превентивне здравствене заштите – кампања вакцинације против хуманог папилома вируса

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САЖЕТАК

Увод/Циљ Основни циљ овог чланка је да се развије основа за креирање стратегије маркетинга на интернету у превентивној здравственој заштити кроз истраживање и кампању за вакцинацију против хуманог папилома вируса (ХПВ). Циљ студије је био увођење стратешког приступа социјалног маркетинга на друштвене мреже у кампањи за вакцинацију против хуманог папилома вируса у Србији.

Методе Квантитативно истраживање је спроведено анкетањем путем интернета, током децембра 2016. године, у које су били укључени родитељи чија су деца кандидати за вакцинацију.

Резултати Добијени резултати истраживања показали су да скоро једна трећина испитаника не зна шта је ХПВ, а скоро исти број испитаника зна да ХПВ узрокује рак. Поред тога, само 14,5% испитаника зна да је ХПВ болест која се најчешће

преноси у свету. Уз одговарајући ниво свести о безбедности вакцине, 97% испитаника би одлучило да вакцинише своју децу. Вакцинацију може да приушти само 39% родитеља, мада на промену њиховог мишљења утиче информација о цени ХПВ вакцине. Сходно томе, 97,5% испитаника би се определило за вакцинацију у случају да је бесплатно.

Закључак На основу резултата и поређења са најбољим праксама других земаља, предложили смо маркетиншку стратегију преко друштвених мрежа. Кампања се фокусира на подизање свести о потреби вакцинације против ХПВ-а и превенцију карцинома, укључујући ширење информација циљној популацији путем друштвених мрежа.

Кључне речи: хумани папилома вирус; вакцинација; превенција; социјални маркетинг; стратешки маркетинг на интернету