

Lay knowledge of HPV infection and the vaccine against HPV in Greece

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ABSTRACT

Background: The human papilloma virus is sexually transmitted and is related to cancer mostly, yet not limited, to the female reproductive system. However it is nowadays possible to prevent the particular transmission of the virus due to the vaccine against HPV, among other screening and preventive measures.

Aims: This exploratory descriptive research study, taking into account the high prevalence of HPV, its oncogenic effect but also the opportunities of prevention, attempts to explore the degree of awareness of health care service users of reproductive age regarding HPV and immunization against it in Greece.

Methods: The population sample included individuals (n=144) of mean reproductive age (19-49 years old) selected as health care service users in Attica and Crete in 2009. A small scale descriptive quantitative survey was conducted employing a structured closed type questionnaire. The questionnaire included questions on the respondents' socio-demographic profile, sexual behaviors, awareness of the HPV and the vaccine against HPV. The SPSS 13.0 software and descriptive statistics were employed to analyzing the data.

Results: An overrepresentation of women (68%) is observed in the sample, while the majority, yet marginal, of participants hold higher education degrees (54%) and are married (56%). The vast majority of the respondents (93%) reported having sexual intercourse, while a significant percentage (62%) of the respondents reported regular use of protective means. Regarding the sources of information, only 16% of the participants appears to use valid sources, while considerable confusion about the symptoms of the disease and the diagnostic methods is observed. 1 / 5 of the sample is not aware of the main ways of transmission of the virus and 1 / 3 report wrong ways of transmission. Finally, only 8% of the sample is vaccinated against HPV and 30% is unaware of the vaccine.

Conclusions: The self-reported sexual behaviors, information on HPV and the vaccine against the virus are almost satisfactory. However an extremely small proportion of the respondents is immunized against HPV. Concurrently, significant knowledge gaps are evident regarding HPV and the vaccine against HPV.

Key words: HPV, vaccination, lay knowledge, sexual health

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INTRODUCTION

Human papilloma virus is the most common sexually transmitted infection among individuals of reproductive age. According to recent epidemiologic data gathered in the United States, the particular virus displays a rather high disease prevalence (23%), while the high-risk age group, which is eventually most vulnerable to the virus, is young individuals of 14-19 years (35%)¹. Results from a recent study in Greece,² report that the detection of the virus with screening tests (Pap tests) amounts to 22.7% of the total sample population, a percentage which is considered as particularly high by the researchers.

While over one hundred HPV types have been identified, at least 30 of them are sexually transmitted. However, only a small group of HPV types is currently associated with malignancy. For instance, HPV16, 18, 32, 34 are the most prevalent oncogenic types, while HPV6 and 11 are most commonly related to anogenital warts. Oncogenic HPV infection is the most important risk factor in cervical carcinogenesis cases. According to the World Health

Organization (2008)³, the HPV is accountable for the 99% of cases of cervical cancer, which is the 2nd most common cancer in female worldwide, and the most common cause of death from cancer in women in the developing world. More specifically, HPV is implicated for the death of 250.000 women annually, while 500.000 new cases are recorded each year.

Beyond the oncogenic effect on the female reproductive system, associations between HPV and intraepithelial neoplasia of the vulva, vagina and anus have been documented in the literature recently. In addition, mucosal human papilloma viruses appear to be involved in specific forms of head and neck squamous cell carcinomas (HNSCC)⁴. Oral cancer (mouth and larynx) is also associated with HPV, particularly if the patient has a history of alcohol consumption and tobacco use⁵. Similarly, despite the fact that a large proportion of women (50-70%) may be infected by some type of HPV during their life, only a limited number of infected female will finally develop cervical cancer. It is proposed therefore

that the occurrence of cancer is most often determined by various other endogenous (probably genes) and exogenous (e.g. smoking, alcohol immunosuppressive drugs, environment) factors apart from the detection of HPV. However, despite the fact that HPV is a wide and rapid spread Sexually Transmitted Disease (STD) with often oncogenic effects, there is still scope for prevention of the disease and the subsequent infection. Firstly, constant condom use among sexually active individuals offers considerable protection against the transmission of HPV. Secondly, smear tests (Pap-test) are used in gynecology to detect premalignant and malignant processes in the cervix which therefore offers early detection of cervical cancer and the opportunity for an effective treatment. The HPV-DNA hybrid capture 2 tests could be also employed as a method of choice in cervical cancer screening. Thirdly, HPV vaccine may prevent infection with specific species of the virus, which are associated, as discussed above, with the development of cervical and other, less common, forms of cancer.

Although, the literature offers a plethora of studies focused on lay knowledge in respect to several aspects of sexual

health, this research paper is one of the few in the literature that approaches the health care service users' knowledge of HPV in combination with their knowledge on the vaccination against HPV. Taking into account that exploration of lay awareness and knowledge on sexual health is of paramount importance in designing and implementing effective sexual health interventions, this paper seeks to disseminate its findings so that they may be utilized in future health promotion initiatives on the topic.

Consequently, as it is shown from the above, the particular sexually transmitted and oncogenic virus deserves further attention from the academic and scientific community due to three basic reasons. The HPV is:

- a) the most common sexually transmitted disease
- b) connected with carcinogenesis and
- c) a preventable disease since primary (vaccination) and secondary (screening and treatment) prevention is available.

The above factors constitute the rationale behind choosing the particular research problem. The aim of this descriptive study is to identify the level of knowledge of lay population regarding the virus HPV as well as the HPV vaccination.

Methodology

Study design and respondents' characteristics

The sample of this small scale survey consists of 144 male and female of mean reproductive age (19 to 49 years old) health care service users. More specifically, the participants in this study were selected from two Health Care Services of the Greek National Health System (NHS) located in two different regions of the country, namely from a branch of the Social Security Organization located in Agioi Anargyroi, in the western part of Athens, , and the Venizeleio-Pananeio Hospital of Heraklion of Crete. A quite equal number of respondents from both areas were included in the sample at the same period (March –August 2009) employing the random sampling technique. Two exclusion criteria were used to extract the sample: a) an age less than 19 years old and more than 50 years old, since we decided to focus on mean reproductive age, and b) the respondents to be health professionals or medical doctors, since we wished to focus on lay people's awareness of HPV and the vaccine against HPV. After ethical permission was acquired to access the field, informed consent was requested and obtained from all the respondents taking

part in this study while anonymity and confidentiality of their answers to the questionnaires was guaranteed.

The main instrument of this descriptive cross-sectional study to data collection was structured individual interviewing. More specifically, a structured questionnaire containing 23 closed type questions was administered to the participants (n=1440) who were approached in health care settings as health service users. The questionnaire included questions on the respondents' socio-demographic profile, sexual behaviors, knowledge on HPV and the vaccination against HPV and also sources of information on sexual health issues. The design of this specially formulated questionnaire was based on systematic literature review, deriving from national and international sources and databases (i.e. CINAHL, MEDLINE etc).

Coding variables: the socio-demographic profile was coded on the basis of years of education and professional status. Education was classified into 8 levels in accordance with an equal number of certificates and degrees (i.e. primary education, lower secondary education, higher secondary education, vocational secondary education, University, Technological Educational Institutes, Master's degree, PhD). The professional

status was also classified into 7 levels including namely the following categories: civil service, private sector, freelance service, housewifery, unemployment, college student, school student. The family status comprised three groups (single, married, divorced/widowed) and finally the age range was separated in six levels (<19, 20-24, 25-29, 30-34, 35-39, >40).

Descriptive statistics were applied to data analyses which were then represented in figures and graphs that show frequencies in the answers of population sample. The SPSS 13.0 was used to record, process and analyze data.

Results

Socio-demographic profile: An overrepresentation of female (68%) is observed in the sample population of this research. In more analytic terms, the socio-demographic profile of health care service users who participated in this study is shaped as follows: a marginal majority (54%) has gained a higher education degree (either from Universities 41%, or from Technological Educational Institutes 13%) and a similar percentage of the population sample are married (56%).

Sexual behaviors: The great majority (93%) of the participants reported having

sexual intercourse, while almost half of the population sample (47%) reported using sporadically condoms in every sexual intercourse to protect themselves from STD and as a method of anti-conception. However, a significant percentage of the respondents (34%) reported never using condoms in sexual intercourse, while this percentage concerns basically individuals aged from 20 to 24 years old. A significant percentage of the sample (22%) reported applying interrupted intercourse as a method of choice for birth control, despite the fact that this method does not offer any protection against HPV or other STDs.

Sources of information: In respect to the sources of information related to sexual health peers appear to play the major role. More specifically, it was found that 32% of the participants use friends and family as the main source of sexual health-related information while handbooks and the Internet come as the second most popular choice (24%). Health Centres of Family Planning and the school (10% and 6% respectively) seem to hold a very minor role as sources of sexual-health related information.

Awareness of HPV and the vaccine against HPV: Regarding the respondents'

awareness of the ways that HPV is transmitted, only 50% of them mentioned that it is an STD. However a significant percentage of the respondents (20%) reported having no knowledge at all on how HPV is spread, while an even higher percentage (34%) of the participants reported erroneous ways of transmission such as through touch (14%) and by toilet use (14%). In respect to the symptoms of HPV, several answers were given, most of which were wrong. For instance, only 8% of the sample appeared to know that the infection with HPV remains most often asymptomatic, whereas 26% of the respondents reported among the symptoms, pain and skin rashes. Confusion is also observed in health care service users' knowledge as for the HPV transmission during birth delivery, since nearly half of the respondents believed it can be transmitted to (46%) to the newborn from the infected mother and the 44% answered HPV cannot be transmitted during birth. Only 1/3 of the sample (37%) appears to know that HPV has an oncogenic impact. However, the vast majority of the participants (70%) appear to have heard of the vaccine against HPV while 30% of those who were not aware of the vaccine, in their majority men, and probably because they are not included in the national program

of vaccination against the virus. Although only 8% of the population has been vaccinated against HPV. Most of the respondents (65%) knew that the effects of the particular virus can be detected through a Pap Test, although a considerable percentage reported ignorance on the topic (30%).

Discussion

In broad terms, the level of knowledge of the health and social care service users' regarding the human papilloma virus is considered to some degree satisfactory. This claim is grounded basically on the following: More than half of the respondents appear to know that HPV is a STD, whereas one third of the sample appears to be aware that HPV infection plays a considerable role in carcinogenesis. Also, the vast majority of the participants seem to be aware of the existence of the vaccine. This almost satisfactory level of awareness is interpreted in with the context of the overall high educational level of the respondents.

In contrast, however, a recent empirical work that focuses on the identification of public knowledge in Malaysia concludes that the awareness of both HPV and the preventive ways of transmission is extremely poor⁶. Similarly, findings from a recent survey

in Thailand, shows that the level of knowledge regarding HPV among female prostitutes is very low⁷. It could be argued therefore that the level of lay knowledge as for the particular virus may be understood at analogy with the wider standard of living and other societal conditions, which may reinforce or impede access to health-related information and knowledge.

However, examining closer the depth of lay knowledge on specific aspects of HPV, knowledge deficits and misperceptions among respondents are observed. For example, half of the respondents gave incorrect answers about the ways of how the virus is spread, reporting that it can be transmitted through touch, simple body contact and toilet use. The above finding can be interpreted in terms of age distribution of the population sample, where almost half of the respondents are young adults (> 19-29 years). In accordance with other empirical works, knowledge of HPV infection and cervical cancer screening⁸ and other sexual health-related issues⁹ is repeatedly found to be low among is young people.

Also, several other studies highlight the lack of relevant and accurate information on HPV infection observed among lay population¹⁰⁻¹². Nevertheless,

this research is to a certain degree in tune with Gesouli-Voltyraki et al's empirical work which assessed women's general knowledge regarding cervical cancer and concluded that it reaches a satisfactory level.¹³

In addition to the above, it is important to emphasize the rather alarming finding in respect to rare condom use that emerged through this work. If the limited condom use is combined with the young age and the lack of information, it becomes more urgent to pay greater attention on health promotion and education interventions.

Overall, this study showed that a very small percentage of health and social care service users have been vaccinated against human papilloma virus. However, this finding is not representative, because the sample included individuals of mean reproductive age (19-49 years), while the vaccination program against HPV is administered to considerably younger ages (12-26 years). Also, this finding is in agreement with the proportion of vaccinated women nationally, since only 11% of the population has been vaccinated against HPV.

However, the need for further educational programmes that will seek to overcome this lack of information is

undeniable. Health education and health promotion programmes are needed to empowering youth to make informed choices in sexual health matters. At the same time, greater implementation of preventive medicine measures needs to be taken. As a very recent study that took place in Greece showed, vaccinating young females against HPV provides substantial public health benefits and is cost-effective at commonly cited thresholds¹⁴. In addition to the above, the fact that women at a lower socio-economic level are less likely to receive the vaccination, as demonstrated in another recent Greek study¹⁵ should not be disregarded. In our study we address how these barriers can be overcome through the coordination of outreach programs- in adolescents and adults- and widespread prophylactic HPV vaccination to reduce cervical cancer.

Finally, according to the present study, the sources of information that lay people use in respect to health matters do not seem to be the most appropriate. Friends, television, commercials and the Internet are reported as the main sources of health-related information. On the contrary, health campaigns and health education programmes at schools and health care services appear to have a very small part in informing the

population. This finding is in direct contrast to similar studies in more economically developed countries. For example, the study of Baer et al. sought to explore first year college students' knowledge about HPVs and to determine whether there were gender differences in this knowledge¹⁶. The authors concluded that health education classes in the United States were the major source (87%) of information about STDs.

In conclusion, it seems that the level of knowledge of health and social care service users is quite satisfactory regarding the effects HPV and the existence of the vaccine against the specific STD. However, it is stressed that the results of this study cannot be generalized to the general population due to the limited sample size. Further research is needed therefore to exploring the lay knowledge about HPV. In agreement with previous research studies this work emphasizes the need for nationwide scale health promotion programs to prevent the HPV infection and eventually cervical cancer^{9,13,14}. Finally, group vaccination covered by health insurance on a free of charge basis and access to more information about the vaccine and its effectiveness¹⁷ would also contribute to the prevention of HPV and subsequently the promotion of sexual health.

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