

Women's knowledge and utilization of gynecological cancer prevention services in the Northwest of Greece

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Summary

Purpose of investigation: In Greece an organized cervical or breast cancer screening program does not exist and the population coverage is unknown. **Methods:** Women of all ages completed a questionnaire, which assessed women's awareness of and participation in breast and cervical screening and human papillomavirus (HPV) vaccination. The women were randomly approached in public areas. **Results:** 1,012 women completed the questionnaire. 52% of the women over 39 years old had undergone mammography in the last year and 76% of the women over 20 years old had a cervical smear test within the last three years in an opportunistic basis. In addition, the likelihood of having regular mammograms was positively associated with the likelihood of having regular cervical smears. Fifty percent of the responders did not identify HPV as the cause of cervical cancer and 38% were not aware of the HPV vaccine. From the women aged 16 to 28 years old, 11% had been vaccinated against HPV and an additional 23% intended to have the vaccine in the next six months. **Conclusion:** Knowledge and utilization of mammography and cervical screening was quite satisfactory, although HPV vaccination coverage was low. Preventive services could be improved through the development of a plan for the information of the public and the distribution of the HPV vaccine.

Key words: Cancer; Breast; Cervix; HPV vaccine; Cytodiagnoses; Mammography.

Introduction

The effectiveness of cervical (Papanicolaou test) and breast (mammography) screening has been established. In countries where an organized, routine and widespread screening program exists like in Australia and the UK, mortality from cervical and breast cancer is considerably reduced [1, 2].

Cervical screening aims at secondary prevention which is based on the diagnosis and treatment of premalignant lesions before they progress to invasive cancer. Breast screening aims at tertiary prevention which is based on the early diagnosis and treatment of invasive disease. In Greece screening for both cancers is opportunistic and there are no reliable statistics concerning the participation of Greek women. However, in a recent paper regarding cervical cancer mortality in South Eastern European countries, it appears that the relevant frequency in Greece is the best among its neighbors [3].

Lately the hopes for reduction in the incidence of cervical cancer are focused on the newly introduced and promising HPV vaccine, which aims not at secondary but at primary prevention. The vaccine protects from the cause of cervical cancer, which is the sexually transmitted infection with certain types of HPV (16 and 18 mainly). According to studies [4, 5], it is extremely effective in preventing premalignant lesions but in order to have a major effect on mortality, a wide female population coverage is essential. In Greece the HPV vaccine was introduced in the national immunization program in 2007. However, it is provided free up to the age of 26.

The aim of this study is to provide data on Greek women's knowledge and utilization of gynecological cancer prevention services, which could be used by policy makers for service improvement.

Materials and Methods

Respondents

The study population was comprised of randomly selected women of all ages and levels of education from the North-West of Greece. They all received a one-page questionnaire with 13 items (Table 1).

Procedure

Either of the two main researchers approached the women. Settings where the study took place were: the university campus of Ioannina, the waiting areas of one of the biggest hospitals in the region (University Hospital of Ioannina), outside the national election centers (the study was conducted during the 2009 national elections in Greece), other places like Civil Services, private offices and central markets. The women who were willing to answer were given the questionnaire to complete it without particular guidance from the researcher. Participants were assured of complete anonymity.

The aim of the questionnaire was to assess the awareness, knowledge and utilization of breast and cervical screening and HPV vaccine. Women were asked whether they were aware of the particular prevention method and if they were utilizing it. In case they were not utilizing it, they were asked to give the main reason why in a multiple choice format. For instance, if they were not having cervical smears, they were asked "why are you not having cervical smears?" and they were given the following options: "a. Fear b. Ignorance c. I believe it does not help d. It does not concern me because of my age e. Other". The questionnaire was concise and short so that women would not get tired or decline completing it because of lack of time.

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Data analysis

Basic descriptive statistics and frequency calculations were performed on all variables. Comparisons were made using the chi-square test.

Results

Study sample

A total of 1,012 women participated, with a mean age of 39 years (range: 16-89 years). As far as the educational level is concerned, 49% (n = 496) had a higher education, 35% (n = 357) secondary, 13% (n = 132) primary, 2% (n = 23) none and 1% (n = 4) did not mention. Regarding the place, 30% (n = 303) of the questionnaires were filled in at the waiting areas of the hospital, 13% (n = 132) at the national election centers, 9% (n = 96) at the university campus and 48% (n = 481) at other public places. The main results are summarized in Table 2 and comparisons between age groups and educational levels are represented in Table 3.

Mammography

Although the majority (97%; n = 986) knew what a mammography was, only 52% (n = 529) were aware of the age women should start mammography screening (40 years). The rest chose "30 years old" (26.88%; n = 272), "20 years old" (8.7%; n = 88), "I don't know" (8.3%; n = 84), "50 years old" (3.85%; n = 39) and "60 years old" (0%; n = 0). Age influenced the possibility of giving a correct reply to this question in a statistically significant degree. Women who did not know, were mainly under 30 years or over 60 years old (p < 0.05). Regarding the frequency of having mammography, 80.28% (n = 812) answered once a year which is in agreement with the guidelines [6], 8.7% (n = 88) did not know, 7.81% (n = 79) answered every six months, 3.26% (n = 33) every five years and 0% (n = 0) every ten years.

Then we examined the women over 39 years old (n = 458) in order to find out their utilization of mammography screening; 79.04% (n = 362) had undergone mammography at least once. Specifically, 51.97% (n = 238) had one the year before, 11.57% (n = 53) two years before, 3.71% (n = 17) three years before, 10.7% (n = 49) more than three years and 1.09% (n = 5) did not mention. The reasons for not having a mammography were negligence (25%; n = 24), ignorance (16.67%; n = 16), fear (14.58%; n = 14), disbelief in the benefit (8.34%; n = 8), age (6.25%; n = 6) and unspecified reasons (29.17%; n = 28). Women over 59 years old were statistically significantly less likely to utilize mammography screening than women between 39 and 60 years old (p < 0.05). Educational level was also statistically significantly associated with a likelihood of having mammography exams (p < 0.05), as 34.7% (n = 51, against 96) of the women with primary education, 15.9% (n = 29, against 153) with secondary education and 12.7% (n = 16, against 110) with higher education had not undergone mammography (p ≤ 0.05).

Table 1. — The 13 items of the questionnaire.

1. Do you know what a mammography is? Yes No
2. At which age should women start mammography screening?
 20 30 40 50 60 I do not know
3. What is the recommended frequency for mammography?
 6 months 1 year 5 years 10 years I do not know
4. Have you ever had a mammography? Yes No
5. If "Yes", how long ago?
If "No", why not? (Fear, Ignorance, I believe it does not help, Age, Other reasons)
6. Do you know what a cervical smear test is? Yes No
7. What is the recommended frequency for a smear test?
 6 months 1-3 years 5 years 10 years I do not know
8. Did you have a smear test the last 3 years? Yes No
9. If "No", why not? (Fear, Ignorance, I believe it does not help, Age, Other reasons)
10. What does HPV cause?
 AIDS Cervical cancer Pneumonia I do not know
11. At which age should women be vaccinated against HPV?
 2-6 months old 1-6 years old 12-26 years old
 > 26 years old I do not know the vaccine
12. Have you had the HPV vaccine? Yes No
Do you intend to have it in the next 6 months? Yes No
13. If "No", why not? (Fear, Ignorance, I believe it does not help, Age, Other reasons)

Table 1. — Main results.

Outcome	Percentage	Numbers
Women of any age who stated knowledge about mammography	97%	986/1012
Women over 39 who have had a mammogram in the last 3 years	67%	308/458
Women of any age who stated knowledge about the Pap smear	99%	1001/1012
Women over 20 who have had a Pap smear in the last 3 years	76%	678/898
Women of any age who stated correct knowledge about HPV	50%	501/1012
Women of any age who stated knowledge about the HPV vaccine	56%	568/1012
Women 16-28 who have had the HPV vaccine	11%	35/330

Table 3. — Comparisons between age groups and educational levels.

	Better responders	Worse responders	p value
Knowledge of age to begin mammography	30-60 y.o.* Primary & Secondary E.†	< 30 & > 60 y.o. Higher E.	< 0.05
Utilization of mammography	40-59 y.o. Secondary & Higher E.	> 59 y.o. Primary E.	< 0.05
Knowledge of frequency of Pap test	22-60 y.o. Secondary & Higher E.	< 22 & > 60 y.o. Primary E.	< 0.05
Utilization of Pap test	22-60 y.o. Secondary & Higher E.	> 60 y.o. Primary E.	< 0.05
Knowledge of HPV	< 51 y.o. Higher E.	≥ 51 y.o. Primary & Secondary E.	< 0.05
Knowledge of HPV vaccine	< 50 y.o. Secondary & Higher E.	≥ 51 y.o. Primary E.	< 0.05
Positive attitude to the HPV vaccine	16-18 y.o. Secondary E.	19-28 y.o. Higher E.	< 0.05

* years old; † Education.

From the women over 39 years old who had undergone mammography screening one year before ($n = 238$), 90% ($n = 214$) had also had a smear test in the last three years. In contrast, from the women over 39 years old who had not undergone mammography screening one year before ($n = 215$), 54% ($n = 117$) had had a smear test in the last three years ($p < 0.05$).

Pap test

A high percentage (98.91%; $n = 1001$) of the respondents declared that they knew what a Pap test was. Regarding the response to the recommended frequency for a smear test, 77.47% ($n = 784$) of the women answered every one to three years with a further 17.98% ($n = 182$) every six months and only 3.85% ($n = 39$) did not know, 0.59% ($n = 6$) every five years, and 0.1% ($n = 1$) every ten years. There was a significantly statistical difference in the educational level and the age ($p < 0.05$) between the women who knew and those who did not know. As for the two last questions of this section 75.59% ($n = 678$) of the women over 20 had had a cervical smear test in the last three years. Women over 60 years old and women of lower education were statistically significantly less likely to have had a Pap smear the last three years. The reasons why one quarter of the responders over 20 ($n = 219$) did not have a smear test were 20% ($n = 39$) negligence, 13.7% ($n = 30$) ignorance, 10.05% ($n = 22$) fear, 9.59% ($n = 21$) age, 6.39% ($n = 14$) hysterectomy, 5.02% ($n = 11$) disbelief in the benefit and 37.9% ($n = 83$) unspecified reason.

From the women over 39 years old who had had a smear test in the last three years ($n = 331$), 65% ($n = 214$) had also undergone mammography screening one year before. On the other hand, from the women over 39 years old who did not have a smear test in the last three years ($n = 122$), 20% ($n = 24$) had undergone mammography screening one year before ($p < 0.05$).

HPV-HPV vaccine

Only half ($n = 501$) of the responders identified HPV as the cause of cervical cancer. From the other half most of the women (35.28%; $n = 357$) had never heard of HPV, 136 (13.44%) thought it was the cause AIDS and 18 (1.78%) the cause of pneumonia. Higher education and age less than 51 years old was statistically significantly associated with knowledge of HPV ($p < 0.05$). Having had a recent cervical smear was also positively associated with knowledge of HPV ($p < 0.05$).

Regarding the recommended age for HPV vaccination, 389 (38.44%) of responders were not even aware of the vaccine, whereas 568 (56.13%) knew that the recommended age for the vaccination was from 12 to 26 years old, which is the target group according to Greek guidelines. The rest chose one to six years old ($n = 28$; 2.77%), above 26 years old ($n = 17$; 1.68%) and two to six months after birth ($n = 9$; 0.89%). There was a significant correlation between knowledge of the vaccine and both education and age ($p < 0.05$). Ignorance of the vaccine was

mostly observed in women with only a primary education or over 49 years old.

The two last questions referred to the responders' attitude towards HPV vaccination. From the women aged 16 to 28 years old ($n = 330$), only 10.61% ($n = 35$) had been vaccinated against HPV. Regarding the 294 women (89.09%) who had not been vaccinated, only 67 (22.79%) intended to have the vaccination in the next six months. The reasons for being against vaccination included ignorance 38.33% ($n = 87$), fear 21.16% ($n = 48$), other 18.94% ($n = 43$), age 13.22% ($n = 30$), and disbelief in the benefit 9.25% ($n = 21$). There was also a very small portion of the responders over 28 years old who were positive to being vaccinated with two women having had and eight intending to have the vaccine. Being in favor or against the vaccine was not affected by educational levels ($p = 0.189$).

Discussion

Since in Greece there are limited epidemiological data and no official statistics concerning cervical and breast screening, our study was an attempt to shed light on this subject.

A screening programme must achieve high population coverage in order to have an effect on mortality. High population coverage usually requires an organised setting. Examples of countries with such program especially for cervical screening are the UK, New Zealand and the Nordic countries [7]. In countries where screening is opportunistic the coverage rates are usually not high enough to influence mortality rates [8]. Surprisingly it appears from this study that despite the fact that mammography and cervical screening in Greece are opportunistic, they both have a very high percentage of population coverage. The reasons are not evident, although they might be related to the very well developed private gynecologic practice in Greece. It is considered socially and medically appropriate for Greek women to have a private appointment with their gynecologist every year. One might assume that this process is essential for the achievement of these high coverage rates, as in this annual visit the gynecologists take the smear test and recommend a mammography according to the age and history. Towards this direction an important role could also have been played by the promotion of information about breast cancer prevention on the mass media and the campaigns of non state associations. The high cervical screening participation rates could explain why Greece appears to have one of the lowest mortality rates from cervical cancer in Southern Europe [3].

Interestingly, a large number of women thought that the frequency of cervical screening was every six months. This might be due to the lack of Greek guidelines, leaving a margin for "overscreening".

As expected the likelihood of having regular mammograms was positively associated with the likelihood of having regular cervical smears. This could mean that

there is a common motivating factor for both tests. This factor could either be the private gynecologist who in Greece has a role similar to the general practitioner/family physician for gynecological issues or the educational level. Lower education increased the risk of not utilizing the screening services. This suggests that coverage could be improved if some information regarding screening services were given to girls during the final years of primary education. The sample size in this study is not particularly large, but it is random and compares favorably to another Greek study in which 1,000 people of both sexes together were included [9].

Our questionnaire did not inquire whether the responders were sexually active because it was thought this might discourage them from completing it. So, the population coverage for cervical screening was calculated assuming that the vast majority of women over 21 years old are sexually active. This assumption was based on the fact that the mean age of sexual activity in Greece is 19.2 years [10].

As far as HPV vaccine coverage is concerned, there are no officially published data, as it was only recently introduced. Our figures are disappointing, since only 11% of the target group had been vaccinated. This is not surprising, as Greek Health authorities did not make any provision for an organized vaccination service similar to the school based programs in the UK and Australia. Apart from the ignorance of HPV and the vaccine it seems that fear triggered by media releases is another deterrent. Eventually, unfounded statements of the side-effects dispersed disbelief and mistrust to the public.

In conclusion, despite the surprisingly satisfactory results regarding the participation in mammography and cervical screening, our study highlights that there is room for improvement. It is essential that screening guidelines are published and the government settles a plan for the distribution of the vaccine and public education. Last but not least, the media, including the major TV channels, should take care to report news regarding the HPV vaccine with responsibility and extreme caution based on medical evidence.

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