

# Knowledge and general consideration about Pap test screening among women from Finland and Greece

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## Summary

It seems that lack of regular Pap smear screening is a risk factor for cervical cancer. Since women started having Pap smears the number of deaths from cervical cancer has dropped dramatically. The purpose of this study was to investigate the knowledge of women about the essential and basic parameters related to the Pap test in the general population of two European countries: Finland and Greece. The same percentages (> 50%) of women in Athens and Helsinki had good knowledge of the Pap test. Comparing country populations, greater numbers of Finnish women had a better level of Pap test knowledge. Additionally, older women in Finland were more educated and informed about the usage of Pap testing due to the good health service information in this country.

**Key words:** Pap Test; Cervical cancer screening; HPV.

## Introduction

It seems that lack of regular Pap smear screening is a risk factor for cervical cancer. Since women started having Pap smears (more than 50 years ago), the number of deaths from cervical cancer has dropped dramatically. The chances of cure are 100% for cervical cancer stage 0 (in situ), and as high as 90% if cervical cancer is discovered early on (stage IA-IB).

Human papillomavirus (HPV) infection is the most common cause and a major risk factor for the development of cervical cancer. There is no evidence that herpes simplex virus (HSV) infection can result in cervical cancer. There are more than 100 subtypes of HPV that infect the genital tract: vulva, vagina, cervix, anus and penis, causing warts and dysplasias. The subtypes 16 and 18 are the most frequently associated with cervical cancer, and are in contrast with subtypes 6 and 11 which are associated with "condylomata accuminata". Women who do not regularly have a Pap smear to detect HPVs or abnormal cells in the cervix are at increased risk of cervical cancer. The HPV effect can be expressed as koilocytes in superficial or intermediate squamous cells, or sharply delineated perinuclear halos in parabasal cells. Occasionally, binuclear cells are present in cases of reactive squamous atypia (which rarely is associated with HPV infection). The importance of HPV detection is emphasized by the fact that multiple, large, well-controlled screening trials have clearly demonstrated that HPV testing is considerably more sensitive than cytology, and only slightly less specific when used in women 30 years of age and older [1].

Although the Pap test is the best tool for detecting pre-cancerous changes of the uterine cervix and cervical

cancer in its earliest stage, the conventional Pap test has a considerable rate of false negatives. The published range of false negatives is 1.6-28% [2]. In order to improve the efficiency and sensitivity of the Pap test and reduce screening time, several types of technologies were developed, including computer technology (Papnet), and liquid-based cytology [3]. Comparing liquid-based cytology versus the conventional Papanicolaou smear, it seems that the first can improve high-standard cervical cancer screening cytology even further.

Liquid-based techniques are used routinely in many countries, and ThinPrep tests have achieved an increase in sensitivity, a dramatic improvement in specimen adequacy, and a reduction in screening time [4].

The importance of women's knowledge regarding Pap testing (including some basic knowledge regarding HPV and diagnosis) is recognised by very recent studies [5, 6]. The lack of regular Pap smear screening is related to inadequate information about the Pap test [5]. On the contrary, the probability of having regular Pap tests is greater in women who know that lack of Pap testing increases the risk of cervical cancer [6]. The purpose of this study was to investigate the knowledge of women about the essential and basic parameters related to the Pap test in the general population of two European countries: Finland and Greece.

## Population and Methods

The study sample consisted of 400 women of different ages and educational levels from Greece and Finland. Two hundred women were from the capital (100 from Athens and 100 from Helsinki), and 200 women were from the province (100 from Kalymnos island, Greece and 100 from Kuopio, Finland). To estimate the knowledge of pap testing in the above sample, all women completed a questionnaire consisting of 12 multiple-choice questions.

The questions were as follows:

*Do you know what a Pap test is?*

- ☐ Yes ☐ No ☐ Partly

*Have you ever been informed about the Pap test? If yes, where from?*

- ☐ Primary school, high school ☐ Friends, relatives  
☐ Books, magazines ☐ Mass media ☐ Other way

*Why did you have a Pap test for the first time?*

- ☐ Prevention ☐ Doctors advice ☐ Friends and family advice  
☐ Pregnancy ☐ Population screening

*How often do you have a Pap test?*

- ☐ Annually ☐ Every 2 years ☐ Every 4 years  
☐ Rarely ☐ Never

*If you rarely have a Pap test, what is the reason?*

- ☐ Economical ☐ Fear ☐ Embarrassment  
☐ Negligence ☐ Lack of health structure

*Until what age must women have a Pap test?*

- ☐ Until 50 ☐ Until 70 ☐ The end of life ☐ I don't know

*How many types of the Pap test are you aware of?*

- ☐ Classic ☐ Liquid-based ☐ Classic+liquid based ☐ I don't know

*What is the percentage of false-negative results of the test?*

*If a Pap test is abnormal, what exams (and/or therapy) should you have?*

- ☐ Colposcopy-biopsy ☐ Curettage ☐ Hysterectomy  
☐ Radiation ☐ I don't know.

*If you have a Pap test and also colposcopy in situ malformations, what is the percentage that can be cured?*

*Is there someone in your immediate family with cervix cancer?*

## Results

The same percentages (57%) of women in Athens and Helsinki had good knowledge of Pap testing. Comparing country populations, greater numbers of Finnish women had a better level of Pap test knowledge. The latter difference is attributed to better knowledge of the Pap test in provincial Finnish women compared to those in Greece. In Finland, the women's answers were almost the same in the capital (57% with correct knowledge and 20% ignorance) and in the rural areas (53% with correct knowledge and 16% ignorance). In contrast, in Athens, 57% of the women knew what the Pap test was, while only 10% were ignorant, but in the island of Kalymnos, the percentages were 39% and 19%, respectively. The rest of the women in both countries knew partly what the Pap test is. Only 117 Greek women knew both methods of the Pap test (conventional and liquid), while 144 Finnish women had that knowledge ( $p = 0.04$ ). Similarly, only 54 women from Kalymnos had that knowledge, while the corresponding number in Kuopio was 75 ( $p = 0.002$ ).

In the age group under 20, lower percentages of women had a good knowledge of Pap testing in both countries (35% in Athens, 30% in Kalymnos, 20% in Helsinki and 15% in Kuopio). In contrast, groups with higher ages had a better knowledge of Pap testing in both countries. In the age group  $> 36$  (36 to 50), a better knowledge could be seen in Finnish women from Helsinki (82%) compared to those from Athens (68%), while there was no difference comparing women from Kuopio to those from Kalymnos (68% and 66%, respectively). This fact can be attributed to the higher educational level of Finnish women from

the capital. The same conclusion could be drawn for older women (over 65), where a better knowledge could be seen in Finnish women from Helsinki (75%) compared to those from Athens (40%).

The doctor was the main information source in relation to the others (school, friends, books, mass media). This was the same in both countries. The main difference was that school was the second source in Finland whereas in Greece it was mass media.

The two main reasons why women do the Pap test for the first time were prevention and doctors' advice. In Greece and particularly in Athens the main reason was the doctor's advice (about 60%). In the island of Kalymnos this percentage was about 44%. In Finland, in Helsinki and Kuopio, these percentages were 57% and 64%, respectively. The difference between Kuopio and Kalymnos could be related to screening policies in Finland.

In contrast, in Greece there is no population screening. The question as to how often do you have a Pap test, a great percentage of Athenian women (46%) have the test every year in contrast to women who live on Kalymnos island, of which 40% have never had the test. The latter percentage in Kuopio was only 20%. In Finland most women in Helsinki and Kuopio are checked every four years. This can be attributed to mass screening which is obligatory for women over 40 every four years.

The percentage of the women who had never had a Pap test in relation to age was very high for ages under 20 (in Athens and Helsinki: 65% and 100%, respectively, and in Kalymnos and Kuopio 90% and 65%, respectively). It should be noted that according to recent standards, Pap testing should not be done in ages under 20, where a great percentage of HPV infection may be found, but with high rates of remission. The test should not be offered to women under 20 because it could result in the over-treatment of many cases. This kind of policy was found in Helsinki.

Fear (80%) and shame (90%) were the two main reasons that the Kalymnian women avoided Pap testing. In contrast the women of Kuopio had Pap tests systematically and if not it was because of ignorance (10%). In Athens, the main reason was economic (40%) but in Helsinki it was because of ignorance (60%).

Many women from both countries were not sure until what age they should have Pap tests (in Athens and Helsinki, 54% and 52%, and in Kalymnos and Kuopio 41% and 65%, respectively). Some gynecologists suggest that the test should be performed until the age of 70 because the chances of disease are very low after age 70. We will not further validate these results because there are no universal policies for the age of stopping Pap smears (range 50 to 64 years in Europe countries).

In Athens 14% of the women knew about the new liquid-based Pap test whereas 1% in Helsinki knew. However, in Kalymnos and Kuopio there was no difference (2% and 1%).

With Pap testing vaginal and cervical inflammations caused by viruses (herpes simplex virus, HPV), bacteria, and germs can be diagnosed. Although most Greek

women were aware that with a Pap smear, infection-inflammation could be diagnosed, these results will not be further evaluated because the main purpose of the test is to diagnose cervical dyskaryosis (corresponding to intraepithelial lesions).

The percentages of false-negative results of the test were 10-30%. In Athens most of the women (56%) knew the right answer but a great number of Finnish women in Helsinki (70%) did not. In Kalymnos and Kuopio, there was no significant difference (30% and 34%, respectively). More Athenian women ( $n = 57$ ) compared to women from Helsinki ( $n = 41$ ) ( $p = 0.02$ ), knew that colposcopy, with or without biopsy could be the next diagnostic step after a non-normal Pap test (with HPV determination as an alternative in ASCUS). Dysplasia can be cured in 100% of cases (and the diagnosis is the main purpose of Pap testing). Less than 27% from both countries were aware of this. They believed that dysplasias could be cured in only about 50% of cases.

## Discussion

This study has investigated the general knowledge of women about Pap screening from two different European countries, Greece and Finland. The sample included women from the two capitals of Athens and Helsinki, and two provincial cities, Kalymnos and Kuopio. Results demonstrated that Greek and Finnish women originating from the capital had a better knowledge about Pap testing compared to women from the provinces.

In a study by Tiro *et al.* [7], among women who had heard about HPV, a great percentage did not know that it causes cervical cancer and that HPV is sexually transmitted and causes abnormal Pap tests. The factors associated with having heard about HPV included: younger age, higher educational, exposure to multiple health information sources, trusting health information, regular Pap tests, awareness of changes in cervical cancer screening guidelines, and having tested positive for HPV [7]. Knowledge about screening was related to exposure to multiple health information and screening guideline centers. Similarly, in Finland, due to multiple health information, older women had a better knowledge compared to Greek women. This fact is also supported by the results of general Pap screening in Finland which has led to an age-standardized incidence rate of 4/100,000 and mortality rate of 1/100,000 women [8]. Income and education are considered to be better predictors of knowledge about cervical cancer prevention than rural residence. Higher rates of cervical cancer in rural areas may reflect lower education and lower income [9]. The greater ignorance of Pap testing in women of Kuopio and Kalymnos (rural parts of the two countries) could be attributed to lower economic standards and educational levels of these regions compared to women from the capital cities.

In a Brazilian study, reflecting the main reasons for not having a Pap smear test done before, were embarrassment and fear of pain in most of the cases. In this study knowl-

edge of HPV infection and cervical cancer was low in this young (urban) population [10].

Results in our study have shown that older women between 36-50 years knew more about Pap testing compared with those under 20 years of age.

Another basic theme was related to the lack of a physician recommendation which contributes to under-use of Pap screening by many eligible women.

Research shows the effectiveness of physician recommendations in improving the use of Pap testing [11]. Increased physician recommendations for Pap tests were noted in Greece and Finland, suggesting the pivotal role of the doctor in screening examinations. Different approaches may be effective in reducing the psychosocial access that contributes to cancer health disparities in underserved populations [12]. Liquid-based cytology is a new vanguard method with high accuracy and sensitivity but with increased cost in the National Health System [13]. Greek women in urban areas with higher economic status have a better knowledge of this new method compared to those located in rural districts with lower economic incomes, like Kalymnos. Reminder services may be a cost-effective way to increase Pap test rescreening rates. These services must follow any changes in the personal data of the women screened (address, phone, etc.) [14]. Data from the literature have suggested that the basic three determinants of social inequity in healthcare service usage are social class, gender, and race or ethnicity [10]. Concerning the last determinant, we have seen in our study that older women in Finland are more educated and informed about the use of Pap testing due to the very good health service information system in this country.

## Conclusion

It is universally accepted that Pap screening has dramatically decreased the rate of cervical cancer.

The general knowledge of women about this inexpensive and simple method depends on several factors. Older women are more informed than younger women. Female populations in urban districts have a wider knowledge and clearer orientation about the purpose of the examination. National Pap test screening may prevent cervical cancer spread.

Healthcare services should always offer extensive information about the aim of the Pap test to all women regardless of their social and economic status.

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