

# The impact of HPV diagnosis on women's sexual and mental health: preliminary findings

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## Summary

**Purpose of investigation:** The objective of the present study was to demonstrate the impact of HPV diagnosis on sexual function and mental health of Greek women. **Methods:** The study population included 51 patients who proceeded to the gynecological outpatient clinic of "Aretaieion" Hospital, Athens, during 2008-2009. The participants were asked to complete a questionnaire regarding demographic characteristics, knowledge on HPV, gynecological and sexual history, as well as questions regarding their mental and sexual health after the diagnosis. **Results:** Mean age of the participants was 36 years and mean age of their first Pap smear test was 24.4 years. Mean age of HPV diagnosis was 34 years and mean number of sexual partners was four. Regarding mental health, the majority experienced anxiety after the HPV diagnosis as well as fear regarding their health in the future. Nearly half of the women experienced guilt and anger and some of them distress, shame, diminution of self-esteem and stigmatization. Diminution in the level of sexual interest and desire and decrease in sexual intercourse frequency were quite often reported. **Conclusion:** Except for the important physical impact of HPV infection, its diagnosis seems to trigger several negative feelings and reduce sexual desire.

**Key words:** HPV; Infection; Psychosexual consequences; Psychological/Psychosocial/Interpersonal impact; Psychological aspects of HPV; Reactions to HPV diagnosis.

## Introduction

HPV infection is very common among sexually active women. Previous studies have demonstrated that a HPV diagnosis may have an important impact not only on women's physical health, but also on their sexual and emotional well being. Although there is limited literature on psychosocial reactions to HPV diagnosis, research among women who have received abnormal cervical smear results indicates that they often experience psychological consequences, including anxiety, fears about cancer, sexual difficulties, changes in body image, and concerns about the loss of reproductive functions [1-4]. In addition to the distress caused by these psychological side-effects, fears about gynecologic investigations and treatments have been shown to decrease adherence to follow-up recommendations among women with abnormal Pap tests [3], suggesting that patient counselling to reduce such side-effects has the potential to both enhance psychological well being and improve follow-up and clinical outcomes [5].

Several studies over the last few years have demonstrated negative effects of HPV diagnosis on women's mental health, including hypochondriac fears, anger, depression, isolation, fear of rejection, shame, guilt, anxiety, stigma, confusion and distress, as well as personal stigmatizing with a significant adverse impact on self esteem and significant relationships [6-8]. Moreover, the receipt of a positive HPV test result often calls sexual fidelity into question, while emotions related primarily to

stigma, fear, self-blame, powerlessness, and anger may raise additional concerns for women regarding disclosure of the disease to significant others, usually to a sexual partner [9-11]. Finally, the presence of anogenital warts can cause feelings of anxiety, guilt, anger, loss of self esteem and create concerns about future fertility and cancer risk [12].

Women who tested positive for HPV stated that this diagnosis made them feel 'less attractive', 'tarnished', 'let down by their bodies', 'defiled', 'contaminated' and 'dirty' [13].

HPV seems to also have negative influence on sexual life, affecting sexual enjoyment and activity. Impairments in sleep and sexual interest, as well as a high percentage of sexual impairments after therapy and worsening of the emotional relationship with the partner were noted, aggravating existing sexual problems [1, 14-16]. Additionally, as noted before, testing positive for HPV raised concerns about women's attractiveness and sexual relationships in terms of trust, fidelity, blame, and protection, particularly for women in long-term monogamous relationships, affecting directly or indirectly sexual life and satisfaction [9-11, 16].

## Materials and Methods

The study population included 51 patients who proceeded to the gynecological outpatient clinic of "Aretaieion" Hospital, Athens, during 2008-2009. The initial number of women who were asked to participate in the study was 80, but their final participation depended on their time availability, as well as comprehension of the Greek language (some of the patients were

foreign), therefore the final sample included 51 women. Patients had already been diagnosed with HPV during a previous visit and particularly the HPV subtypes that are responsible for cervical cancer. Therefore they were advised to regularly perform a colposcopy, usually every six months. None of the women participating in the study had a history of another sexually transmitted disease besides HPV.

Participants were asked to complete a questionnaire that included demographic and medical data, as well as questions regarding their sexual and mental health. The completion of the questionnaire took place after the gynaecologic exam (usually colposcopy); it was anonymous and was distributed by a member of the research team (usually a physician other than their gynecologist).

Other than the demographics, the participants were asked to give some information regarding their knowledge of HPV and sexually transmitted diseases (STDs), as well as information regarding diagnosis of HPV (age and duration of diagnosis, how it was diagnosed, the presence of genital warts or not, disclosure to partner), their gynecological history (age of first Pap smear, frequency of Pap smear testing, time since last Pap smear) and their sexual history (age of first sexual intercourse, number of sexual partners, and method of contraception they use).

In the second part of the questionnaire, the participants were asked to state their feelings after HPV diagnosis, in order to investigate the impact of the diagnosis on women's mental health. Specifically, participants were asked to complete a questionnaire that included 12 different items regarding feelings and reactions after HPV diagnosis. A five-graded scale ranging from "not at all" to "very much" followed the statement: "After HPV diagnosis did you experience: a) physical distress, b) anxiety, c) guilt, d) anger, e) shame, f) negative effect in your self-confidence, g) stigma, h) fear – anxiety regarding your health in the future, i) diminution in the level of your sexual desire, j) diminution of sexual intercourse frequency, and k) less sexual life satisfaction". Answers within the range "quite" to "very much" were considered as positive and therefore the specific feeling or reaction was regarded as present. Participants were also asked to answer the question: "Did HPV diagnosis have a negative effect on your sexual relationship?". Answering alternatives were "not at all, a little, quite, much, very much". Similarly, answers ranging from "quite" to "very much" were considered positive answers. Additionally, patients were asked to report the level of worry they experience regarding their HPV infection, choosing from a six-graded scale: "not at all, not much, a little, quite, very much, extremely".

In the third part, the participants were asked to complete the SCSF (Symptom Checklist of Sexual Function), a simple four-item self-report checklist regarding men's and women's perception of and satisfaction with sexual function (two versions available, one for each gender), developed by the 2<sup>nd</sup> International Consultation on Sexual Medicine [17]. The brief symptom checklist is suitable for use in primary care settings and addresses the level of satisfaction with sexual function, using a single question: "Are you satisfied with your sexual function? (Yes/No). In case of a negative response, three additional questions exist, assessing duration that subjects are dissatisfied with their sexual function, the type/s of sexual problems experienced, as well as the willingness of the person to discuss the problem with a health care provider. Its administration time is less than five minutes [17]. Finally, women were asked to report their level of worry regarding their sexual problem, as well as the feelings they would experience if they had to live with it for all their life.

## Results

### *Study population - demographics*

The main characteristics of the subjects are shown in Table 1. Mean age of the participants was 36 (min 21, max 68) years and 86.3% of them lived in Athens. The majority (62.8%) were highly educated (college or university) and married or in a stable relationship (60.8%).

### *Knowledge of HPV and STDs*

Most of the participants reported that they knew about HPV (76%) and cervical cancer (70%), as well as the fact that HPV is the main causal factor of cervical cancer (82.2%). Furthermore, they believed that HPV is frequent or very frequent (82%) among sexually active women and that condom use can prevent HPV transmission (72%) as well as the development of cervical cancer (62%). The vast majority of women were also aware of the vaccine against HPV (78%). Regarding other STDs, the majority (> 76%) were aware that HIV, syphilis, Chlamydia, hepatitis and genital herpes are sexually transmitted, while half of them (50%) knew about the sexual transmission of gonorrhea. Finally, the major source of information for the patients regarding STDs was medical staff (80%), followed by magazines (50%), friends, TV and the Internet (32-38%).

### *Diagnosis of HPV*

Mean age of HPV diagnosis was 34 years. Most women found out about HPV through Pap smear testing (72%) and the rest by the presence of genital warts (18%), colposcopy (8%) or biopsy (2%). One third of the participants (32%) had genital warts at some point during their infection. Interestingly enough, nearly all women (89.8%) told their sexual partner about the HPV diagnosis.

### *Gynecological & sexual history*

Mean age of first Pap smear testing was 24.4 (min 17, max 40) years and mean frequency of testing for the women in our sample was every 9.4 months. The majority of participants had had sexual activity during the previous year (88.2%) and 60.8% of them during the prior month. The most common contraceptive method they used was the condom (37.3%) and 23.5% preferred withdrawal during ejaculation of the partner, while 37.3% of our sample did not answer regarding the contraceptive method they used. Interestingly enough, none of the women currently use the pill, although 41.2% have taken it at some point in their life mainly for gynecological reasons (e.g. menstrual cycle regulation). Mean number of sexual partners during the lifespan was four (min 1, max 10), except for five participants who stated to have had more than ten sexual partners in their life. These data points were not taken into account and were excluded as outliers since they had a strong influence on the mean number of sexual partners. Finally, mean age of first sexual intercourse was 18.8 (min 15, max 32) years.

Table 1. — Demographic and social characteristics.

	Number of women (%)
<i>Age</i>	
20-29 years old	19 (37.3%)
30-39 years old	16 (31.4%)
40-49 years old	7 (13.7%)
> 50 years old	9 (17.9%)
<i>Relationship status</i>	
Married	17 (33.3%)
Divorced	8 (15.7%)
Single/In occasional relationships	12 (23.5%)
In a long-term relationship	14 (27.5%)
<i>Education</i>	
High school	19 (37.2%)
College or University graduate	32 (62.8%)
<i>Employment status</i>	
Public employee	14 (27.5%)
Private employee	10 (19.6%)
Self-employed	5 (9.8%)
Student	7 (13.7%)
Unemployed	7 (13.7%)
Housewife	4 (7.8%)
Pensioner	4 (7.8%)
<i>Residence</i>	
Athens	44 (86.3%)
Rural areas	7 (13.7%)

Table 2. — Mental health and psychological reactions after HPV diagnosis.

<i>After HPV diagnosis, did you experience:</i>	
Distress	17.6%
Anxiety	76.5%
Guilt	41.1%
Anger	43.1%
Shame	21.5%
Diminution of self-esteem	21.6%
Stigmatization	15.7%
Fear and anxiety regarding your health in the future	82.4%
<i>How much do you worry about your problem (HPV infection)?</i>	
Extremely	11.2%
Very much	28.9%
Quite	40%
A little	6.7%
Not much	11.1%
Not at all	2.2%

Table 3. — Sexual health and sexual function after HPV diagnosis.

<i>After HPV diagnosis:</i>	
'I felt less "sexual"'	33.3%
'The level of my sexual desire decreased'	41.2%
'The frequency I had sexual intercourse decreased'	43.1%
'I was dissatisfied with my sexual life'	21.5%
'My relationship was negatively affected'	11.7%
<i>Symptom Checklist of Sexual Function - Women (SCSF) Yes (%)</i>	
Are you satisfied with your sexual function?	74.5%
Do you have problems with little or no interest in sex?	35.3%
Do you have problems with reduced genital sensation?	17.6%
Do you have problems with reduced or loss of vaginal lubrication?	13.7%
Do you have orgasmic disorders?	21.6%
Do you have pain during intercourse?	23.5%
Do you have other sexual problems?	7.8%

### Is there an impact of HPV on women's mental health?

HPV diagnosis was a stressful life event for most of the participants, since 76.5% of them experienced anxiety (grades "quite-very much") as well as fear and anxiety regarding their health in the future (82.4%). Nearly half of them (41.1%) experienced guilt (grades "quite-very much") and anger (43.1%). Overall, 17.6% of the subjects experienced physical distress, 21.5% shame, 21.6% a diminution of their self-esteem and 15.7% felt stigmatized by the diagnosis (grades "quite-very much"). Finally, 80% of the participants stated that they were still worried (ranging from "quite" to "extremely") regarding their health problem related to HPV (Table 2).

### Is there an impact of HPV on women's sexual health?

Nearly half of the participants (41.2%) reported that they experienced a diminution of sexual desire after HPV diagnosis, as well as a diminution in the frequency of sexual intercourse (43.1%). One third (33.3%) felt "less sexual" after the diagnosis and 21.5% reported that they experienced less satisfaction from their sex life. Nevertheless, not many women (11.7%) believed that HPV diagnosis did negatively affect their relationship with their partner. Regarding the participants' answers on the SCSF, 74.5% reported satisfaction with their sexual function, while the most prevalent sexual problem was little or no interest in sex (35.3%), followed by pain during sex (23.5%), orgasmic problems (21.6%), problems with reduced genital sensation (17.6%), problems with reduced vaginal lubrication (13.7%) and other problems (7.8%) [Table 3].

### Women who are married or in a stable relationship compared to single women

Chi-square analysis was performed to compare married women (or women who were in a long-term stable relationship) to single ones, regarding their mental and sexual health after the HPV diagnosis. No significant differences were found on any of the variables of mental health, except for the item "shame", while married women seemed to experience shame more often than singles, after the HPV diagnosis was made ( $p < 0.05$ ). Similarly, no statistically significant differences were found regarding sexual health, except for the problem "little or no interest in sex", where married women reported it more often than single ones ( $p < 0.05$ ).

## Discussion

The primary objective of the present study was to assess the degree to which HPV diagnosis affects women's sexual and mental health. The sample included well-educated women, highly informed regarding HPV as well as other sexually transmitted diseases. Probably, seeking information regarding HPV follows a HPV diagnosis while Greek women do not get official education on STDs or sexual health during high school. Additionally, based on the current results, a quite long period of time (6 years)



elapsed between first intercourse and first gynecological check up, demonstrating that women should be educated and motivated to seek preventive care earlier in their life.

Except for the important physical impact of HPV infection, its diagnosis seems to trigger several negative feelings to a woman such as *anxiety, guilt, anger and fear* of negative consequences on their general health in the near future. These findings are consistent with previous studies [1-4, 6-8,12], and they all demonstrate the importance of emotional well being for these women, since it may increase adherence to follow-up recommendations and improve clinical outcomes. HPV diagnosis is a stressful life event that raises fears and worries regarding physical health, reproduction and sexuality, which are quite important issues for women in their mid-thirties.

Additionally, several sexual dysfunctions may arise following HPV diagnosis, with the most prevalent being *reduced sexual desire disorder and pain during coitus*. Supported also by other studies [1, 14-16], testing positive for HPV raises concerns about a woman's attractiveness and self-esteem, trust in the relationship with the partner and blame for the infection, affecting both sexual life and pleasure.

Limitations of the present research include the likelihood of some degree of sample self-selection since participants volunteered to participate, depending on their time availability and their academic abilities to answer the questions. A second limitation is the fact that the results were based on a small, non-randomized, specific sample. Nonetheless, since the present study presents preliminary findings and is still underway, further research based on larger sample sizes is essential to investigate the extent that HPV diagnosis influences women's emotional and sexual well being.

## Conclusion

Although the results of the present study are not representative of the general population, HPV diagnosis seems to have an adverse impact on self-esteem and significant relationships. Since evidence on the psychosexual impact of HPV is scarce, further research is important to determine patients' needs and further improve their management.

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