

# Exploring the care received by HPV-positive married women at a colposcopy clinic in Tehran, Iran: A qualitative study

Fereshteh Jahdi<sup>1</sup>, Effat Merghati-Khoei<sup>2</sup>, Abbas Ebadi<sup>3</sup>, Maryam Kashanian<sup>4</sup>,  
Fatemeh Oskouie<sup>5</sup>, Shayesteh Jahanfar<sup>6</sup>

<sup>1</sup>Nursing Care Research Center, Iran University of Medical Sciences, Tehran, <sup>2</sup>Iranian National Center for Addiction Studies (INCAS), Institute for High-Risk Behaviors Reduction, Tehran University of Medical Sciences, Tehran, <sup>3</sup>Behavioral Sciences Research Center, Life Style Institute, Faculty of Nursing, Baqiyatallah University of Medical Sciences, Tehran, <sup>4</sup>Department of Obstetrics and Gynecology, Iran University of Medical Sciences, Tehran, <sup>5</sup>Nursing Care Research Center and School of Nursing and Midwifery, Iran University of Medical Sciences, Tehran, Iran, <sup>6</sup>Department of Public Health, The Herbert H. & Grace A. Dow College of Health Professions, Central Michigan University, Michigan, USA

## ABSTRACT

**Objectives:** Patient experience is the focus of individual care and services to meet patient needs, but this depends on how health care providers deliver their services. The aim of this study was to explore the perceptions of human papilloma virus (HPV)-positive married women from the care they received from health professionals at a colposcopy clinic in Tehran, Iran. **Materials and Methods:** Three focus group discussions were conducted between September and December 2016 with 30 women who had recently been referred to the clinic for cervical screening or colposcopy. Samples were collected by a purposeful sampling method in Tehran, the capital of Iran. The focus group discussions were carefully recorded at the same time as data collection. After ensuring the data saturation, interviews were terminated and data were categorized. Data was analyzed by direct conventional content analysis using MAXQDA-10. **Results:** Two themes and three sub-themes resulted from the data analysis, including emotional responses (anxiety and fear of women), and appropriate/inappropriate behavior of the healthcare providers. **Conclusion:** Healthcare providers, by identifying factors that affect patient's stress, could help reduce the negative outcomes such as patients' emotional responses to HPV positive results.

**Keywords:** Colposcopy, HPV positive women, HPV testing, Iran, qualitative research, quality of health care

## Introduction

The number of women undergoing colposcopy examination of their lower genital tract continues to increase. Colposcopy is a valuable investigation method for women whose cervical smear test shows dyskaryosis. About, 4–5% of women who

have positive Pap smear need further diagnostic investigation. Colposcopy with directed cervical biopsy is the most frequently used procedure in this situation.<sup>[1,2]</sup>

In developing countries, cancer of the cervix is the most common cause of death among women of reproductive age.<sup>[3]</sup> Colposcopy and endocervical curettage are better diagnostic tools than repeated Pap smear.<sup>[4]</sup> Result of a survey of anxiety level, knowledge, and satisfaction with the procedure in women undergoing colposcopy showed that fewer than half of the sample were satisfied with the information they received about the procedure.<sup>[5]</sup> Moreover, a

**Address for correspondence:** Dr. Fatemeh Oskouie, Nursing Care Research Center and School of Nursing and Midwifery, Iran University of Medical Sciences, Tehran, Iran.  
E-mail: [Oskouie.f@iums.ac.ir](mailto:Oskouie.f@iums.ac.ir)

Received: 27-12-2019

Revised: 06-03-2020

Accepted: 06-06-2020

Published: 30-07-2020

### Access this article online

#### Quick Response Code:



Website:  
[www.jfmpc.com](http://www.jfmpc.com)

DOI:  
10.4103/jfmpc.jfmpc\_1243\_19

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: [WKHLRPMedknow\\_reprints@wolterskluwer.com](mailto:WKHLRPMedknow_reprints@wolterskluwer.com)

**How to cite this article:** Jahdi F, Merghati-Khoei E, Ebadi A, Kashanian M, Oskouie F, Jahanfar S. Exploring the care received by HPV-positive married women at a colposcopy clinic in Tehran, Iran: A qualitative study. *J Family Med Prim Care* 2020;9:3549-54.

systematic review showed that women had limited understanding of human papillomavirus (HPV) and many of them did not respond to questions about their existing knowledge of HPV and cervical cancer.<sup>[6]</sup> This could increase women's anxiety and reduce their ability to make informed choices.<sup>[7]</sup> On the other hand, a colposcopy can have psychological consequences including pain, discomfort, and failure to return for follow-up. Furthermore, colposcopy has been shown to be associated with a high level of anxiety at all stages of screening for cervical cancer.<sup>[5]</sup> As long as HPV is a known cause of cervical cancer which is the second-most common cancer among women worldwide, and one of the primary healthcare approach is pay attention to people's health needs throughout their lives, which is the importance of the health of the entire population and the decrease of health inequities.<sup>[8]</sup> Therefore, assessing patients' perceptions of the quality of care not only provides information about the actual experiences but also reveals which aspect of care is considered important.<sup>[9]</sup>

There are few published data on this issue and as far as the authors are aware, there is no research describing the perceptions of HPV-positive married women in this regard. Therefore, we attempted to study the perceptions of HPV-positive married women referred to a clinic for colposcopy procedure in a major hospital in the capital city of Tehran, Iran. It is hoped that the results of this study would help to improve healthcare services offered by healthcare professionals.

## Methodology

### Study design

A qualitative content analysis design was used to explore the perceptions of HPV-positive married women with regard to care received at a colposcopy clinic in Iran. Focus group discussions (FGDs) were utilized for data collection to study the women's perception of healthcare providers' behavior, and acceptability of cervical cancer screening at a colposcopy clinic of the Firozgar Hospital affiliated to Iran University of Medical Sciences.

### Participants and sampling strategy

In this qualitative study, three FGDs were held with 30 HPV-positive married women aged 25–59 years old who were sexually active and living with their permanent or casual partners. Participants had been referred to the Firozgar Hospital in Tehran for colposcopy. This hospital was selected because; it is a referral hospital for all hospitals within the district.

### Data Collection

Qualitative FGDs were used to permit in-depth exploration of women's views. The FGD is an appropriate technique to generate data from an individual's moral convictions and to explore predominant social norms.<sup>[10]</sup> Data collection was carried out during September and December 2016.

The inclusion criteria were; being a 25–59 years old HPV-positive married woman who has come for colposcopy, having abnormal cervical cytology, urethral, cervical, vaginal, or persistent vulvar condyloma acuminatum, and Pap smear screening in the last 6 months.

Permission to use a voice recorder was obtained, and the recordings were transcribed verbatim and translated into English later.<sup>[11]</sup> The semi-structured interview began with an open-ended request: "Can you elaborate more on how you were informed about the colposcopy test result by health care providers and how were their behaviors?" Afterward, questions were developed based on the responses obtained from the participants. Sampling was continued with maximum variation to yield greater transferability and saturation of data.<sup>[12]</sup>

The group discussions were tape-recorded, transcribed verbatim, and a maximum of 10 women were invited to participate in each discussion. All of the FGDs were held in the colposcopy clinic at Firouzgar Hospital in Tehran.

Sampling with maximal variation is one of the most widely used purposeful sampling methods, in which the participants and research setting are selected purposefully among a wide range of variations. The selection of participants with different opinions and viewpoints allowed the researchers to better comprehend the phenomenon and obtain richer data.<sup>[13]</sup> To achieve maximum variation, informants were selected from different age groups. The samples also had different socioeconomic status, religiosity, and education level. Data saturation was achieved after three FGDs. In fact, no new data was obtained from the last FGD. The FGDs lasted for 60–90 minutes.

### Data analysis

Data were analyzed using the conventional content analysis method of Graneheim & Lundman.<sup>[14]</sup> In this approach, data analysis was done simultaneously with the data collection. Each FGD was transcribed verbatim and analyzed before the next FGD. In the next step, the semantic units were extracted from the statements using line-by-line coding, and the codes were created by repeated discussions between the researchers. After several readings, a general concept was obtained and the texts of the FGDs were divided into several semantic units and then were coded. The semantic units were summarized, compressed, and extracted in the code form and the codes were categorized based on their similarities and differences. The extracted codes were managed by MAXQDA text data organization software version 10.

### Trustworthiness

The maximum variation sampling enhanced the transferability of data collection methods, and the FGDs were used to enhance the credibility and dependability of the data.<sup>[14]</sup> To check the credibility, member checking and peer review was conducted. We asked five of our participants for confirmation of the findings

during the FGDs (member check). To ensure dependability, the consistency of findings, the codes, and the process of data analysis were checked with four individuals who were familiar with the qualitative methods of content analysis (peer check). A detailed description of participants' characteristics, FGDs' setting, and data collection and analysis methods with examples of participants' experiences were created to help readers judge the possible transferability of the finding to other contexts.<sup>[13]</sup>

### Ethical considerations

This study was approved by the Ethics Committee of Iran University of Medical Sciences with the No: 1395.95-03-123-29572. Written informed consent was obtained from all participants before each FGD.

### Results

In total, 30 HPV-positive married women, aged between 25 and 59 years participated in this study. All participants had children, and most of them were literate [Table 1].

Considering the perceptions of HPV-positive married women from the care they received from healthcare professionals, a total of two themes and three sub-themes resulted from the data analysis, including emotional responses (anxiety and fear of women), and health care providers' behaviors (appropriate/inappropriate behaviors).

Table 2 show some examples of the analytical process.

The theme and sub-themes which reflect the perceptions of HPV-positive married women regarding care received at the colposcopy clinic are summarized in Table 2.

### Emotional response

This theme included one sub-theme "lack of women's knowledge about the examination, HPV test result, and colposcopy that could lead them to have an emotional response. The most important issue from the participants' view was the psychological impact, including anxiety, fear, and cry, when getting a suspected result.

**Table 1: Demographic characteristics of participants (n=30)**

Demographic characteristics	No	Percent
Age		
25-34	8	26.66
35-44	12	40
45-54	9	30
≥55	1	3.34
Education level		
Literate	20	66.66
Illiterate	10	33.34
Children		
0-2	16	53.34
3-5	14	46.66

### Lack of women's knowledge about the examination, HPV test result, and colposcopy

Some of the participants stated that lack of consistent and clear information given by the healthcare providers can increase their anxiety.

*A 35–39 years old woman with an inadequate/ abnormal test result stated: "When health care provider told me that I have cervical cancer, I felt I am going to die, because I did not knew anything about HPV" (P4, FGD1).*

It appears that respecting the right of people in regard to treatment-related concerns is very important

*A 34-year-old woman stated that: "When the DR told me that I must repeat the colposcopy as soon as possible, I looked at the worst possibility, and then I thought, I don't know if the time has anything to do with the cancer grading, this was the reason of my anxiety"(P8, FGD1).*

The participants responded to how they felt or reacted when the test result was read to them.

Yasna's narrative revealed that she felt terrible and wanted to know what type of illness she had. Gole who was horrified and anxious declared that: *"It is not my fault and this disease is transferred to me by my husband" (P11, FGD2).*

Maryam who was thoroughly worried stated that: *"I wondered why I had to be so unfortunate to be among the ill people" (P14, FGD2).*

In this study women frequently described the feelings of anxiety, fear and concern about their HPV test result and sexual relationship. Other studies have suggested that HPV testing may be a sensitive and complex issue for women, confounded by the psychosocial stigmas and distress over its link to cervical cancer.<sup>[15,16]</sup>

This suggests that healthcare providers may face significant challenges in informing women they are infected with a high risk "cancer virus", but not offering explicit treatment.

When the healthcare provider declares a positive test result without considering the mental state of the patient, the negative result of that behavior may manifest itself as the patient's negative resilience towards the caregiver. Results of a study showed that, when we think about something associated with a negative stimulus, it is difficult to divert attention from negative thoughts.<sup>[17]</sup> Anxiety has been associated with increased amygdala and reduced prefrontal activity,<sup>[18]</sup> which suggests that in areas of uncertainty, affective components of decision-making may take precedence over rational cognitive elements.<sup>[19,20]</sup> This indicates that the participants worried their thought of their treatment might affect the decision of others about performing colposcopy. It also seems that reducing the time needed to clear the infection, awareness about HPV infection, and the experience of women affect their behavior.

Clinical uncertainty can cause anxiety in both healthcare providers and patients. The use of rational judgment and

**Table 2: Examples of the analytical process**

Meaning unit participants quote	Condensed Meaning unit	Code	Sub-theme	theme
“Imagine; you’ve come for colposcopy, you feel nervous about the pap result, and you want to get the information about your disease from the examination, but you are not getting any information and healthcare providers leave you alone on the gynecologic bed without providing you any information. This is a nightmare for you and you will get upset.”	Difficulties in getting information from healthcare provider	Women’s problem	Lack of women’s knowledge about the examination, HPV test result, and colposcopy	Emotional response:
The healthcare provider simply read off the test result to reveal my diagnosis, and that’s how my cancer became apparent to me”.	Advantage of health care provider giving information	Women’s needs	appropriate behaviors; healthcare providers’ view point on informing the test result in the best way.	Healthcare providers’ behaviors
When the physician gives the results to me, I decided to visit a private clinic next time.	Difficult to communicate with patients	Communication problem	Inappropriate behaviors; healthcare Providers’ viewpoint on not getting the test result in the best way.	

colposcopy’s experience appears to help decision-making, and play a vital (and sometimes more dominant) role in risk assessment.<sup>[17]</sup>

### Healthcare providers’ behavior

The participants experienced both appropriate and inappropriate behaviors of healthcare providers when they received care or diagnosis result in the colposcopy clinic. This theme contains the following sub-themes; appropriate behaviors of healthcare providers and inappropriate behaviors of health care providers. These sub-themes are discussed below:

#### Appropriate behaviors of healthcare providers

Healthcare providers are expected to behave according to the standards of human behavior. Some of the participants reported that healthcare providers in the colposcopy clinic showed acceptance and friendly towards the HPV-positive patients. The following quotes illustrate this:

*“They declared that I should not be worried; I merely have to check in every three months”.*

*(A 40 years old and illiterate, P24, FGD3).*

*A 48-year-old patient with two children, and literate, experienced a similar attitude from the healthcare provider: “I received a positive examination result and a great support from the healthcare providers”, (P21, FGD3).*

*A 50-year-old housewife was grateful for the healthcare providers’ attitude:*

*“The healthcare providers were friendly towards me. They showed me others who used to be sick like me and are now well, and I felt encouraged and grateful” (P9, FGD1).*

Many of the participants emphasized on the humanitarian aspect of care and stated that they wanted to feel valued by having their difficulties appreciated and understood by others.

#### Inappropriate behaviors of healthcare providers

Some of the patients reported that when healthcare providers want to give patients the result, they do not usually give any information about the HPV test or explain the test and discuss how the test results may determine the next screening interval.

Some participants believed that, the waiting time for doctor’s examination was too long and gave cause to discomfort. Some newly referred women described how concerned they felt when they found that, they had a long wait until their colposcopy appointment, or their GP delayed the referral process.

Mary stated: *“The extensive duration of waiting time, and considering what the gynecologic operation entails was very painful l” (P3, FGD1).*

A few of the participants referred to the normatively utilized method of informing patients about diagnosis in medical environments as invoking psychological harm.

Zahra, who had undertaken the colposcopy examination revealed that: *“When I heard that I have cervical cancer, for a moment, I lost all hope in life and I had a severe depression for a week. They didn’t give me more details and Information” (P16, FGD2).*

Nazi stated: *“I did not have a positive response, so I thought it is all over resolved, but they did not tell me it would be possible to get relapsed again. They did not even say what they were using. So I decided to visit a private clinic next time” (P30, FGD3).*

## Discussion

Women’s attitudes towards the behavior of healthcare providers and the way they informed their clients about the results of

cervical cancer and colposcopy were determined in this study. The main findings showed that, even though the participants had heard about cervical cancer, they did not have a sufficient understanding of the HPV disease to prevent their anxious behavior, furthermore women with borderline or mildly dyskaryotic smear results who were HPV-positive were more anxious, distressed, and concerned than those who were HPV-negative, had normal smears or were not tested for HPV.<sup>[21]</sup>

The adverse psychological consequences of a positive HPV test result, including anxiety and stress, self-blame, powerlessness, and feeling stigmatized and worried about disclosing to others have been documented in other studies.<sup>[16,22]</sup> Several studies have also documented the complex association between adverse emotional reactions to HPV-positive test results and HPV knowledge; knowing that HPV as a common infection has been associated with reduced anxiety. This is while; knowledge of HPV as being a sexually transmitted infection has been associated with higher levels of emotional distress.<sup>[23,24]</sup> This highlights the need for tailoring and piloting specific HPV messages for women to minimize their adverse emotional reactions.<sup>[25]</sup> Senkomago and Saraiya (2017) stated that perceptions or behaviors including compliance with follow-up procedures, and also methods to educate or communicate with women and healthcare providers about HPV are the issues that need to be considered properly.<sup>[26]</sup>

It has been widely reported in the western literature that women with abnormal Pap smear test undergoing colposcopy have a high level of anxiety.<sup>[27,28]</sup> However, information on the Asian population that has significant cultural differences is lacking in this regard.<sup>[6,29]</sup> HPV testing is a complex issue for HPV-positive married women and healthcare providers, and this issue will remain a challenge for them until healthcare providers communicate information to women in a way that ensures their understanding of the facts while limiting their anxiety about the infection. Healthcare providers have a responsibility to ensure that women who are encouraged to participate in colposcopy clinics for cervical screening and HPV testing are adequately informed so that, psychological harm of detecting HPV is minimized. The results highlighted the crucial role of information about HPV provided by the healthcare providers in moderating the experience of women undertaking this test. The finding also suggested that clear and consistent information about HPV could reduce the anxiety of patients.

### Strengths and weaknesses of the study

The qualitative FGD of this study was vital for the research questions, although data collected or used in this study were collected in natural settings, and participants were free to speak their minds based on their real-life experiences. A limitation of this study is that the findings may not be transferrable to other settings due to the cultural and ethnic diversity in Iran.

### Conclusions

The participants in this study expressed positive experiences with regard to the emotional response to HPV test results and the

attitudes of the healthcare provider, and negative experiences with regard to the healthcare providers' behavior. The patients' perception of the quality of care and their satisfaction with it may affect their health outcome. We recommend that particular interventions such as psychological follow-up should be provided for women who are undergoing colposcopy. If a further referral to a colposcopy clinic is essential, specific counseling and psychiatric assessment should be carried out for the affected patient. Also, the staff and physicians should take time to explain the diagnosis fully and discuss their preferences about aspects of consultation to alleviate the anxiety of affected women. As a result, health policymakers should consider appropriate training programs for healthcare providers to help them gain more knowledge on this issue and improve their attitude.

### Acknowledgements

We would like to thank the district medical office staff members in Firozgar Hospital who made it possible for us to carry out this study. We would also want to give special acknowledgment to the participants. The authors would like to thank the Iran University of Medical Science for approving and funding this project.

### Ethical considerations

This study was approved by the Ethics Committee of Iran University of Medical Sciences with the No: 1395.95 03 123 29572. Written informed consent was obtained from all participants before each FGD. The entire data collection was anonymous. All participants were given fictitious names and were informed that participation in the study was voluntary. They could withdraw at any time, and none of the participants would be identified in any publications derived from the study. Refusal to participate in the study would not interfere with the service or treatment they received at the center. The transcriptions and records were kept secured and coded in a protected file.

### Financial support and sponsorship

This study was submitted in partial fulfillment of a PhD thesis in research which was supported by Iran University of Medical Sciences (IUMS).

### Conflicts of interest

There are no conflicts of interest.

### References

1. Kavanagh AM, Broom DH. Women's understanding of abnormal cervical smear test results: A qualitative interview study. *BMJ* 1997;314:1388-91.
2. Swancutt DR, Greenfield SM, Luesley DM, Wilson S. Women's experience of colposcopy: A qualitative investigation. *BMC Women's Health* 2011;11:11.
3. Spensley S, Hunter RD, Livsey JE, Swindell R, Davidson SE. Clinical outcome for chemoradiotherapy in carcinoma of the cervix. *Clin Oncol* 2009;21:49-55.
4. Karimi Zarchi M, Binesh F, Kazemi Z, Teimoori S, Soltani HR, Chiti Z. Value of colposcopy in the early diagnosis of

- cervical cancer in patients with abnormal pap smears at Shahid Sadoughi hospital, Yazd. *Asian Pac J Cancer Prev* 2011;12:3439-41.
5. Galaal K, Bryant A, Deane KHO, Al-Khaduri M, Lopes AD. Interventions for reducing anxiety in women undergoing colposcopy. *Cochrane Database of Syst Rev* 2011:CD006013. doi: 10.1002/14651858.CD006013.pub3.
  6. Bennett KF, Waller J, Ryan M, Bailey JV, Marlow LA. The psychosexual impact of testing positive for high-risk cervical human papillomavirus (HPV): A systematic review. *Psychooncology* 2019;28:1959-70.
  7. Hendry M, Pasterfield D, Lewis R, Clements A, Damery S, Neal R, *et al.* Are women ready for the new cervical screening protocol in England? A systematic review and qualitative synthesis of views about human papillomavirus testing. *Br J Cancer* 2012;107:243. doi: 10.1038/bjc.2012.256.
  8. World Health Organization. *Women and Health : Today's Evidence Tomorrow's Agenda*. Geneva: World Organization; 2009.
  9. Rademakers J, Delnoij D, de Boer D. Structure, process or outcome: Which contributes most to patients' overall assessment of healthcare quality? *BMJ Qual Saf* 2011;20:326-31.
  10. Sandelowski M. Focus on research methods: Whatever happened to qualitative description? *Res Nurs Health* 2000;23:334-40.
  11. De Vos AS. *Research at Grass Roots: For the Social Sciences and Human Services Professions*. Pretoria: van Schaik; 2002.
  12. Speziale HS, Carpenter DR. *Qualitative Research in Nursing: Advancing the Humanistic Imperative*. 5<sup>th</sup> ed.. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins; 2011.
  13. Polit DF, Beck CT. *Nursing Research: Generating and Assessing Evidence for Nursing Practice*. Philadelphia: Lippincott Williams & Wilkins; 2015.
  14. Graneheim UH, Lundman B. Qualitative content analysis in nursing research: Concepts, procedures and measures to achieve trustworthiness. *Nurse Educ Today* 2004;24:105-12.
  15. Johnson CY, Sharp L, Cotton SC, Harris CA, Gray NM, Little J, *et al.* Human papillomavirus infection and anxiety: Analyses in women with low-grade cervical cytological abnormalities unaware of their infection status. *PloS One* 2011;6:e21046. doi: 10.1371/journal.pone.0021046.
  16. McCaffery K, Waller J, Nazroo J, Wardle J. Social and psychological impact of HPV testing in cervical screening: A qualitative study. *Sex Transm Infect* 2006;82:169-74.
  17. Cisler JM, Koster EH. Mechanisms of attentional biases towards threat in anxiety disorders: An integrative review. *Clin Psychol Rev* 2010;30:203-16.
  18. Bishop SJ, Duncan J, Lawrence AD. State anxiety modulation of the amygdala response to unattended threat-related stimuli. *J Neurosci* 2004;24:10364-8.
  19. Herry C, Bach DR, Esposito F, Di Salle F, Perrig WJ, Scheffler K, *et al.* Processing of temporal unpredictability in human and animal amygdala. *J Neurosci* 2007;27:5958-66.
  20. Wager TD, Davidson ML, Hughes BL, Lindquist MA, Ochsner KN. Prefrontal-subcortical pathways mediating successful emotion regulation. *Neuron* 2008;59:1037-50.
  21. Maissi E, Marteau T, Hankins M, Moss S, Legood R, Gray A. The psychological impact of human papillomavirus testing in women with borderline or mildly dyskaryotic cervical smear test results: 6-month follow-up. *Br J Cancer* 2005;92:990. doi: 10.1038/sj.bjc.6602411.
  22. Daley EM, Perrin KM, McDermott RJ, Vamos CA, Rayko HL, Packing-Ebuen JL, *et al.* The psychosocial burden of HPV: A mixed-method study of knowledge, attitudes and behaviors among HPV+women. *J Health Psychol* 2010;15:279-90.
  23. O'connor M, Costello L, Murphy J, Prendiville W, Martin C, O'leary J, *et al.* 'I don't care whether it's HPV or ABC, I just want to know if I have cancer.' Factors influencing women's emotional responses to undergoing human papillomavirus testing in routine management in cervical screening: A qualitative study. *BJOG* 2014;121:1421-30.
  24. Waller J, Marlow LA, Wardle J. The association between knowledge of HPV and feelings of stigma, shame and anxiety. *Sex Transm Infect* 2007;83:155-9.
  25. Buenconsejo L, Kothari-Talwar S, Yee K, Kulkarni A, Lara N, Roset M, *et al.* Estimating the burden of illness related to genital warts in the Philippines: A nationally representative cross-sectional study. *Infect Agents Cancer* 2019;14:26.
  26. Senkomago V, Saraiya M. Examining Acceptability of Self-Collection for Human Papillomavirus Testing Among Women and Healthcare Providers with a Broader Lens. Mary Ann Liebert, Inc. 140 Huguenot Street, 3<sup>rd</sup> Floor New Rochelle, NY 10801 USA; 2017.
  27. Kola S, Walsh JC. Patients' psychological reactions to colposcopy and LLETZ treatment for cervical intraepithelial neoplasia. *Eur J Obstet Gynecol Reprod Biol* 2009;146:96-9.
  28. Walsh JC, Curtis R, Mylotte M. Anxiety levels in women attending a colposcopy clinic: A randomised trial of an educational intervention using video colposcopy. *Patient Educ Couns* 2004;55:247-51.
  29. McBride E, Marlow LA, Forster AS, Ridout D, Kitchener H, Patnick J, *et al.* Anxiety and distress following receipt of results from routine HPV primary testing in cervical screening: The psychological impact of primary screening (PIPS) study. *Int J Cancer* 2020;146:2113-21.