

## ORIGINAL

# The study of Pap smear conduction and its related factors based on health belief model in women referred to health services center of Qom University of Medical Sciences during year 2020

*El estudio de la conducción de la prueba de Papanicolaou y sus factores relacionados basado en el modelo de creencias de salud en mujeres remitidas al Centro de Servicios de Salud de la Universidad de Ciencias Médicas de Qom durante el año 2020*

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Cervical cancer is caused by the human papillomavirus (HPV). Pap smear is a test to diagnose cervical cancer in women. Up to 60% of deaths from cervical cancer have been identified by test. The purpose of this study was to investigate the prevalence of this test and its associated parameters among females visiting health centers in Qom. In this study, 320 women with health records who were referred to health centers in Qom in 2020 were chosen using a multistage random sample approach and inclusion and exclusion criteria. A robust and reliable researcher-made questionnaire with demographic variables, awareness questions and health belief model questions were developed. The data were finally analyzed by SPSS software with 0.05 significance level. Overall, %11.25 of the subjects regularly underwent Pap smear screening, %51.87 irregularly participated in cervical cancer screening programs, and %36.88 did not undergo. Cervical cancer was not seen as a serious condition by the participants. Even ladies who felt vulnerable attempted to conceal their feelings. As a result, while they had a low perception of susceptibility and the severity of disease risk, they had a higher perception of barriers, which led to a lower level of Pap smear use.

**Key words:** Cervical cancer, Pap smear, human papillomavirus.

**Resumen**

El cáncer de cuello uterino es causado por el virus del papiloma humano (VPH). La prueba de Papanicolaou es una prueba para diagnosticar el cáncer de cuello uterino en mujeres. Hasta el 60% de las muertes por cáncer de cuello uterino se han identificado mediante pruebas. El propósito de este estudio fue investigar la prevalencia de esta prueba y sus parámetros asociados entre las mujeres que visitan los centros de salud en Qom. En este estudio, 320 mujeres con registros médicos que fueron remitidas a centros de salud en Qom en 2020 fueron elegidas utilizando un enfoque de muestreo aleatorio de múltiples etapas y criterios de inclusión y exclusión. Se desarrolló un cuestionario robusto y confiable elaborado por investigadores con variables demográficas, preguntas de concienciación y preguntas del modelo de creencias de salud. Los datos fueron finalmente analizados por el software SPSS con un nivel de significancia de 0.05. En general, el 11,25% de los sujetos se sometieron con regularidad a la prueba de Papanicolaou, el 51,87% participó de forma irregular en los programas de detección del cáncer de cuello uterino y el 36,88% no se sometió. Los participantes no consideraron el cáncer de cuello uterino como una afección grave. Incluso las mujeres que se sentían vulnerables intentaron ocultar sus sentimientos. Como resultado, aunque tenían una baja percepción de susceptibilidad y la gravedad del riesgo de enfermedad, tenían una mayor percepción de las barreras, lo que llevó a un menor nivel de uso de la prueba de Papanicolaou.

**Palabras clave:** Cáncer de cuello uterino, frotis de Papanicolaou, virus del papiloma humano.

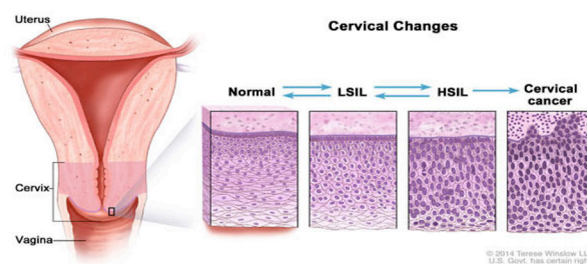
## Introduction

Human papillomavirus (HPV) is sexually transmitted and is common in young people. They are usually cleared by the immune system. When high-risk types persist, they can cause abnormal cervical cells. If at least two-thirds of the surface layer of the cervix is affected, it can be termed cervical precancerous lesions<sup>1</sup>. Precancerous lesions can develop into cervical cancer after several years. Not all people with precancerous lesions of the cervix develop cervical cancer, but it is difficult to predict who will develop the condition. There are a number of different types of HPV that can cause precancerous lesions and cervical cancer. HPV16 and HPV18 are the most important high-risk types because they are responsible for about 70% of cervical cancers in the world. Prophylactic vaccination stimulates the production of antibodies that protect against future HPV infections by injecting HPV-like particles into the muscle.<sup>2</sup>

HPV viruses could be transmitted through sexual intercourse if they came into touch with infected genital skin, mucous membranes or body fluids. According to their ability to cause cancer, human papillomavirus genotypes are classed as high risk or low risk. HPV 6 and 11 which cause benign warts are the most prevalent low-risk types. High risk HPV are associated with development of cervical carcinoma (types 16, 18, 31, 33, 45, 52, and 58)<sup>3&4</sup>. Although there is no virus-specific treatment for HPV infection, screening and treatment for pre-invasive cervix illness is very effective in avoiding cervical cancer progression<sup>5</sup>. Cervarix which targets HPV types 16 and 18, was released in 2007 and Gardasil 9 which targets HPV types 6, 11, 16, 18, 31, 33, 45, 52, and 58 was released in 2014. All of these vaccines are meant to be given before sexual activity begins, if at all possible<sup>6</sup>. According to current research, the three approved HPV vaccinations have equivalent effectiveness in preventing cervical cancer<sup>7</sup>. According to a WHO position document on HPV vaccines published in 2017, all countries should move forward with nationwide HPV immunization. Several studies have found that, despite the high prevalence of HPV, there is a lack of information or erroneous perceptions about the virus, even among informed people. Despite the dangers of HPV, most women are unaware of them and have never heard of the virus<sup>8</sup>.

There is evidence that when parents or young women are fully informed on the dangers and advantages of HPV vaccination, they are more likely to accept it<sup>9</sup>. Knowledge and attitudes about HPV infection and vaccines will have a significant impact on the outcome of a cervical cancer immunization campaign<sup>10</sup>. As a result, we conducted a systematic assessment of several literature databases to determine the Iranian population's knowledge and attitude toward HPV and the HPV vaccine<sup>11</sup>.

**Figure 1:** These images show how cervical cells that have long-lasting infections with high-risk HPV can change over time and become abnormal. Abnormal cervical cells may also return to normal even without treatment, especially in younger women. LSIL and HSIL are two types of abnormal changes to cervical squamous cells.



## Methods

The present study is a descriptive and analytical study. The statistical population included all women living in Qom. It was in 2020. In this study, 320 women were referred to health centers in the city of Qom was selected. This rate is according to the formula for estimating the sample size in descriptive studies with 95% confidence level, accuracy 0.05 and the prevalence of using Pap smear test is 30% based similar study. Inclusion criteria include being Iranian, age 20 to 60 years old, married, including spouse, deceased spouse or was separated from his wife. Method in this study was a multi-stage randomization. Use a researcher questionnaire to collect data. For this purpose, after extensive study and search internet, question bank was prepared and the initial questionnaire to obtained and used after confirming its validity and reliability it placed. This questionnaire consists of 7 parts Demographic characteristics, awareness questions (14 questions), Questions based on the Health Belief Model include sensitivity Perceived 5 questions (perceived intensity) 5 questions (perceived benefits) 4 questions (perceived obstacles) 5 questions (action guide) (8 questions).

## Results and Analysis

According to the completion of the questionnaire by 30 women with similar characteristics to the studied samples Cronbach's alpha internal consistency coefficient of awareness questions 0.72, perceived sensitivity 0.79, perceived intensity, 0.81, Perceived benefits 0.78, perceived barriers 0.76 and guidance Action 0.77. The mean age of the samples was 33.74 ± 8.71 years and with a minimum the age was 19 years and the maximum age was 56 years. 18.2% 7 people (illiterate, 6.56%) 21 people (educated) Elementary, 25.94% 83 people (with secondary education, 94.40% (131 people) with secondary education and 24.38 Percentage (78 people)

had university education. 34.69Percent (111 people) they are employed and the rest is 65.31 percent 209 people (Khan Hadar. 15.94%) 51 people (no Children, 40%) 128 people (with one child, 26.87 86% (with two children and 17.19%) 55 (They had more than two children.) Is. The results also show 11.25% (36 people) had regular Pap smears and 51.87% (166 people) Irregularly in cervical cancer screening programs 36.88% (118 people) had never participated They did not use this test.

## Discussion

To prevent cervical cancer some strategies, exist such as fast and successful treatment of vaginal and cervical infections to reduce the virus's transmission rate. The use of condoms to reduce the chance of transmission by up to 70%, reducing the number of sexual partners, and HPV vaccination are really effective<sup>12</sup>. Possible causes of cervical cancer include: Increasing the number of sexual partners, starting sexual activity before the age of 20, multiple deliveries, smoking, history of weakened immune system, history of visceral malignancy especially in the genitals, radiation therapy, condition Low socio-economic status, taking oral contraceptive pills, viral infections such as HPV and not participating in HPV Pap screening programs [Smear test] and especially doing it in the last 5 years<sup>13</sup>. Mean age in patients studied is 49. The average age of onset of cervical cancer is 47 years. Age of 39, 35 and 60, 64 are at risk. According to studies In Iran, the incidence of this cancer is 4.5 percent in year reported to indicate the importance of cervical cancer. The uterus is among the cancers of women in Iran<sup>13</sup>. Among these, Pap smears are among the most effective and least it is the most expensive final test for screening patients' cervical cancer is used. lesions only with biopsy in examination Colposcopy is detectable in the absence of Pap smear test<sup>14</sup>.All women in a community cannot be called to a clinic for a biopsy and colposcopy, and it is time consuming and costly, Thus, Pap smear test of a cervical cancer screening method in women communities Various has been proposed and approved<sup>15</sup>. Acceptable proposed protocol for cervical cancer screening Uterus performed by the American Cancer Society in 2012<sup>16</sup>. Pap smear every three years in women 21 to 65 years old are necessary<sup>17</sup>. It is struck that only 5% of women in developing countries are participated in Pap smear

screening programs while this rate in the United States is about 90%<sup>18</sup>. Now considering the importance of the issue, human behavior is affected by many different individual factors, social etc., this study utilizes Health Belief Model One of the models of studying behavior that show the relationship between health beliefs and health behavior<sup>19</sup>. The results of the present study indicated the fact that the percentage significantly (more than one third) of the women under study did not participate in a cervical cancer screening program. There were more than half of the irregularly pop tests. They had used smears and only a small percentage of them Regularly (every three years) screening schedule follow cervical cancer through a Pap smear they did. The results of other studies in our country indicates the status of cervical cancer screening Uterus through Pap smear is not desirable so in the study of absorption only 14.5% regularly they used Pap smear test<sup>20</sup>. This is the case in other developing countries as well<sup>21&22</sup>. Results of the present study along with other similar studies in the country shows the rate of Pap smear in our country is not desirable while in developed countries about 90% People are tested at least once for cervical cancer Pap smear used Hand<sup>23</sup>.

In most industrialized countries, the reason for using Pap smear test is due to mortality. Cervical cancer has been significantly reduced. Differences in cervical cancer mortality rates in developed and developing countries resulting from doing or not performing a Pap smear. It should be noted that failure to perform regular cancer screening Cervical cancer risk increases two to six times that covers the cervix. The results of the present study showed that the knowledge of the women studied regarding Pap smear test is not in good condition.so that more than half of women have moderate awareness and a third had poor awareness<sup>24&25</sup>.

In this study Fear of the outcome was found in testing and embarrassment were the biggest obstacles to doing it. These results can ring a risk to health planners because low perceived sensitivity and intensity can be the most important factor in not taking perform regular Pap smears as described earlier. Finally, it should be noted that the present study was done cross-sectionally and the conclusion was made cause and effect on results. Also using a self-reported questionnaire is another limited part of this study.

**Table 1:** Achievable scores and how to classify the scores of knowledges and structures of the health belief model.

Structures	Achievable scores	good	medium	poor
0-4/6	4/6-9/2	9/2-14	0-14	Awareness
5-10	10-15	15-20	5-20	Perceived sensitivity
5-10	10-15	15-20	50-20	Perceived severity
5-10	10-15	15-20	5-20	Perceived benefits
5-10	10-15	15-20	5-20	Perceived Obstacles
8-16	16-24	24-32	8-32	Action guide

**Table II:** Comparison of mean and standard deviation of health belief model instruments according to the use of Pap smear test.

Significant level	No screening	Unregular screening	Regular screening	Awareness average
<0/001	5/32	6/11	8/31	Defiant deviation
	2/35	1/89	1/34	Perceived sensitivity
	8/31	11/01	14/22	average
	3/85	2/29	2/22	Defiant deviation
	8/31	11/01	14/22	Severely perceived
	10/01	12/00	14/05	average
	2/25	2/91	3/11	Defiant deviation
	11/99	13/20	14/11	Perceived barriers
	2/11	2/25	2/48	Average
	17/04	15/31	12/71	Defiant deviation
	3/35	2/96	2/51	Action guide
	15/2	18/21	24/48	Average
	5/66	3/62	4/31	Defiant deviation

**Table III:** Awareness correlation matrix, health belief model constructs and behavior towards Pap smear test.

Model Instruments	1	2	3	4	5	6
Awareness	125%	107%	-317%	69	123	156
Perceived sensitivity	144%	-118%	126%	108%	-11%	
Perceived intensity	138%	133%	221%	-133%		
Perceived benefits	106%	611%	-148%			
Perceived barriers						
Action guide	-297%	-166%				
Behavior	-	-	-	-	--	-

## Conclusion

The results showed that divorced and widowed, number of marriages, marriages under the age of 16 and taking birth control pills is a risk factor of Cervical cancer. The use of treatments Cryoactivation can reduce the risk of infection. The results of this study are groups at risk of women. Findings of this study and similar studies are expressed takes a Pap smear every 6 months of women at risk are essential. This study showed that Women who have cancer tried to hide it. On the other hand, it showed that awareness and knowledge alone in women's participation in Pap tests Smear does not play a role due to the meaning of communication of model structures with the behavior of using this Pap smear test. In the present

study, perceived barriers and perceived sensitivity are the most important reason for not having a Pap smear. Due to the high barriers, the rate of acceptance of this screening test was not desirable on the other hand with understanding of belief lack of vulnerability of their less studied subjects. They knew the risk of developing the disease and its complications and this kind of belief adopts any preventive behavior weakens.

## Conflict of Interest

The authors declare that they have no conflict of interest.

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