

# Barriers to prevention of cervical cancer in the city of Porto Velho, Rondônia, Brazil

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## Barriers to prevention of cervical cancer in the city of Porto Velho, Rondônia, Brazil

**Objective.** Identify the related factors with the no adherence of women in preventive practices of cervical cancer (CC), in a coverage area of a Family Health Team in the city of Porto Velho (Rondônia, Brazil). **Methods.** Descriptive, cross-sectional study held in 2013. It was applied a questionnaire containing questions related to the health belief model (HBM) of the instrument “Champion’s Health Belief Model Scale”, validated and culturally adapted to Brazil, to 286 women. **Results.** 87.7% of women state that they have been submitted to prevention of CC; Regarding the parameters of the HBM, it was found that 74.5% of the women had low scores for the perception of susceptibility to the disease; equal percentage of women had an moderate perception of severity; 52.8% have an moderate perception of the benefits gained from the examination of prevention; and 51.4% have moderate perception of barriers to perform the same test. **Conclusion.** the process involving the prevention of CC involves the supply of services and availability of skilled

professionals. However, the adoption of preventive behavior depends not only on external factors, but also own subjective factors to women.

**Key words:** woman health; uterine cervical neoplasms; secondary prevention.

## Barreras en la prevención del cáncer de cuello uterino en Porto Velho, Rondonia, Brasil

**Objetivo.** Identificar los factores relacionados con la no adhesión de las mujeres a las prácticas preventivas del cáncer de cuello uterino (CCU) en el área de cobertura de un Equipo de Salud de la Familia en el Municipio de Porto Velho (Rondonia, Brasil). **Métodos.** Estudio descriptivo de tipo transversal realizado en 2013. Se aplicó una encuesta compuesta por preguntas referentes al Modelo de Creencias en Salud (MCS) del instrumento “Champion’s Health Belief Model Scale”, validado y adaptado transculturalmente en Brasil a 286 mujeres. **Resultados.** El 87.7% de las mujeres

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afirmó haberse realizado alguna vez en la vida el examen de prevención de CCU. En cuanto a los parámetros del MCS se verificó que el 74.5% de las mujeres obtuvo una baja puntuación en la percepción de susceptibilidad de sufrir la enfermedad; igual porcentaje de mujeres presentaba percepción media de la gravedad; el 52.8% tuvo percepción media de los beneficios obtenidos con la realización del examen de prevención, y el 51.4% poseía percepción media de las barreras para realización del mismo examen. **Conclusión.** El proceso de la prevención del CCU involucra desde la oferta del servicio hasta la disponibilidad de profesionales cualificados. Sin embargo, la adopción del comportamiento preventivo no depende solamente de factores externos, pues también intervienen factores subjetivos propios de las mujeres.

**Palabras clave:** salud de la mujer; neoplasias del cuello uterino; prevención secundaria

### Barreiras à prevenção do câncer de colo uterino no município de Porto Velho, Rondônia, Brasil

**Objetivo.** Identificar os fatores relacionados com a não adesão de mulheres as práticas preventivas do câncer

## Introduction

The Cervical Cancer (CC) is considered an important public health problem in Brazil, and in the north, is the most common cancer in women, surpassing breast cancer. Infection with human papillomavirus (HPV) is the most common risk factor, being present in over 95% of cases of cervical cancer. Others risks factors are related to greater exposure to HPV, but we can also mention smoking, prolonged use of oral contraceptives and immunosuppression.<sup>1-3</sup> This cancer can be prevented with regular Pap smear test of the cervix, also called Papanicolaou, which has low cost and is able to reduce drastically cases of invasive cancer. However, the National Institute of Cancer provides data showing that the state of Rondônia and the City of Porto Velho still have difficulties in reaching the goals with regard to achieving the screening tests in the target population.<sup>1</sup>

de colo uterino (CCU), na área de cobertura de uma Equipe de Saúde da Família no Município de Porto Velho (Rondônia, Brasil). **Métodos.** Estudo descritivo, do tipo transversal realizado em 2013. Aplicou-se um questionário contendo perguntas relacionadas ao modelo de crenças em saúde (MCS) do instrumento “*Champion’s Health Belief Model Scale*”, validado e adaptado transculturalmente ao Brasil, a 286 mulheres. **Resultados.** 87.7% das mulheres afirmaram já ter realizado exame de prevenção do CCU; Quanto aos parâmetros do MCS, verificou-se que 74.5% das mulheres obtiveram pontuação baixa para percepção de susceptibilidade frente a doença; igual percentual das mulheres apresentaram média percepção de gravidade; 52.8% possuem média percepção dos benefícios obtidos com a realização do exame de prevenção; e 51.4% possuem média percepção de barreiras para realização do mesmo exame. **Conclusão.** O processo envolvendo a prevenção do CCU passa pela oferta dos serviços e disponibilidade de profissionais qualificados. No entanto, a adoção do comportamento preventivo não depende somente de fatores externos, mas também de fatores subjetivos próprios às mulheres.

**Palavras chave:** saúde da mulher; neoplasias do colo do útero; prevenção secundária.

The Preventive Behavioral Health (PBH) occurs when people anticipate negative situations for their health, try to avoid them or reduce their impact or detect a disease in asymptomatic period.<sup>4</sup> The Health Belief Model (HBM) is done by focusing on the attitudes and beliefs of individuals, which seeks to explain not only a particular health problem, but can be adapted to others behavioral problems. In the 1950s, Rosenstock, Hochbaum, Leventhal and Kegells, social psychologists working in the U.S. Public Health Services presented this theory to the public health system, to explain the reason for non-adherence to prevention programs and detection of disease, by individuals.<sup>5</sup> Propositions of the Model of Health Belief state that the behavior depends on two variables: (1) the desire to avoid the disease or, if already ill, to cure; (2) the belief that a specific behavior concerning health will prevent or improve the state of the subject.<sup>5</sup>

According to the HBM, to do a person produce preventive behaviors related to the disease, she must: To believe that this problem can affect her particularly, considering susceptible to a health problem (Susceptibility Perception); Realizing the consequences and repercussions of the severity of health problems, which are inserted in social relations, work and family (Severity Perception); Believe in the effectiveness of measures to reduce the possibility of disease (Benefit Perception); and believe that the decision making will reduce threats, however, concurrently refers to negative aspects that can jeopardize or impede the realization of it (Barrier Perception).<sup>6</sup> Perceptions of susceptibility and severity can be stimulated internally (symptoms) or externally (health education), which triggers and motivates the individual to act. As referred to by some authors, issues related to health services, characteristics of the patient and the professional are aspects that can cause dissatisfaction, pain, boredom, being on factors that serve as barriers to action and stimulate conflicting motives of coping. In this aspect, the individual evaluates the costs and benefits of action before adopting it.<sup>4,5</sup>

The decision on how the individual will behave concerning his health will be established by the subjective value attributed to each dimension of the HBM facing the danger or health risk. The vulnerability and severity perceived in threat or risk situations have preventive force in behavioral decision making in health.<sup>7</sup>

Faced with such problem this research was conducted with the objective of study, according to the Health Belief Model, the factors that may be involved with the non-adherence of women to preventive practices of cervical cancer, in the coverage area of a family health team in the city of Porto Velho, Rondônia state, Brazil.

## Methods

This is a study with a quantitative, descriptive and cross-sectional approach. The study was conducted in the city of Porto Velho, capital of

Rondônia state, northern Brazil. Specifically in the Family Health Team (FHT) Embratel I, Family Health Unit My Little Piece of Ground, in which there are three family health teams. The relation of women was obtained from the Primary Care Information System (PCIS), with the base in the year of 2012. The inclusion criteria were: age 20-59 years of age (because this is the age group considered by the Ministry of Health for screening cervical cancer until 2013), having performed or not, earlier, the Pap smear test; be a resident of the area covered by the family health team; have cognitive ability that enabled the interview and who agreed to participate in the study. Women under 20 years of age or over 59 years and who have had cervical cancer were excluded.

From the PCIS record, it was found that there are 800 women in the area of coverage and age group of interest for this study. To calculate the sample the following parameters were used: error of 5.0%; confidence level of 95.0% and an estimated prevalence of 50.0%, which is what determines the larger sample size. From these parameters, were found a total of 260 subjects for composition of the sample. Calculation performed by the software Statcalc of the Epi Info, version 6.0. Anticipating the possibility of losses in the process, we worked with a 10% increase which totaled 286 interviews.

The sample was stratified according to the micro area of residence within the proposed territory. The selection of participants happened upon systematic random selection of households that would be visited. The study was conducted by applying forms formed by closed questions during the months from March to September, 2013.

The third part of the form consisted of questions regarding the Health Belief Model (HBM), constituting the form "Champion's Health Belief Model Scale" (CHBMS), validated and culturally adapted to Brazil. In this study were used the form already adapted for cervical cancer, applied in a study in the state of Rio de Janeiro, composed of 29 questions divided into four ranges: susceptibility (5 questions), severity (7

questions), benefits (5 questions) and barriers (12 questions). For each statement of the scales, the individual chooses between five alternatives: strongly disagree, disagree, neither agree nor disagree, agree and strongly agree. For each of the alternatives is assigned a value ranging from one to five. The items are then added and is obtained a value for each of the scales.<sup>8</sup>

In the scales “susceptibility and severity” the higher the score, the higher the perceived risk and severity to the CC. In the scale “benefits”, the higher the score, the individual believes in the benefit of the Pap smear test. In the scale “barriers”, the higher the score, the greater the perceived barriers regarding the prevention of cervical cancer.<sup>4</sup> The data were entered into spreadsheet of Excel software, version 7.0 and transported to database creation and further analysis by Statistica software, version 7.0.

To comparison between the categorical variables, was performed a Multiple Correspondence Analysis (MCA), in which the association between

the variables is shown by the distance between them in two-dimensional graphic or perceptual map, constructed from a defining matrix of Association dimensions, of which are removed the dimensions with greater explanatory power, in these are found the associations of greater intensity. The MCA has as basis the beginning of the analyses process the  $\chi^2$  Test.<sup>9</sup>

According to the same author, MCA is of great use, as becomes quite simple visualization of all possible correlations between variables, so, known as multiple or multivariate, helping in the understanding of several factors involved in the same event.<sup>9</sup>

For HBM analysis, were used the values obtained with the sum of the numbers assigned the answers provided by the participants of the study. The higher the value obtained for each item, the greater the belief in replied item, so, the relationship between such beliefs and attitudes presented and reported by participants. For this classification, were used the scale showed in Table 1.

**Table 1.** Scale used to determine the intensity of perception regarding the parameters of the Health Belief Model

HBM Parameters	Perceptions intensity basing on “CHBMS”		
	Low	Moderate	High
Susceptibility	5 – 10	11 – 19	20 – 25
Severity	7 – 14	15 – 27	28 – 35
Benefits	5 – 10	11 – 19	20 – 25
Barriers	12 – 24	25 – 47	48 – 60

This project was submitted to the Committee of Ethics on Health of the Health Center of the UNIR, obtained approval, and the CAAE number: 09269312.0.0000.5300. Were followed the recommendations of the resolution/CNS/466/12.<sup>10</sup> Women’s participation was voluntary with the signing of the informed consent. Similarly, were obtained the prior authorization of the health manager of city of Porto Velho.

## Results

The 286 women are distributed in the age groups 20-59 years old, with a slight predominance of the age group 30-39 years. Regarding family income, 69.9% live with up to three minimum wages, 23.8% have income between four and nine minimum wages, 2.3% have income higher

than 10 minimum wages and 3.9% said live without own salary. When asked if they attended school, 87.2% said yes. In addition, 18.4% have less than nine years of education, 64.8% have between nine and 12 years of education and 16.8% had more than 12 years of formal education.

Regarding the earlier realization of the Pap smear test, 87.7% of women said had done some time in their lives; while 11.1% said never did it before. It also inquired about the number of cervical cytopathology test made in the last twelve months and it was found that: 47.9% performed it once; 13.2% twice; 0.7% three times; and that 33.9% did not perform any test. As the frequency with which carry out preventive examinations of the CC, highlight the following frequencies: 53.0% annually; 17.6% every six months; 8.8% 1 once every two years; 8.0% only once in a lifetime; 6.8% variable. The use of condoms during intercourse was reported by only 17.8% of the interviewed women.

Also, was asked to the women if there was any case of cervical or breast cancer in the family and 15.0% said yes. In addition, highlight the frequency according to the relationship, 3.7% of cases occurred with the mother; 37.0% with aunt; 11.1% with Grandma; 25.9% with cousin; 22.3% with sister.

Regarding the HBM parameters, it was carried out the sum of the values attributed to the answers given by the interviewed women. Thus, it obtained an individual score for each of the four parameters. The scores were grouped according to the scale already shown in the methodology. First, as the demonstrative scores of perception of susceptibility, it was found that 74.4% of women received low scores, highlighting the sense of low risk or no risk of contracting cervical cancer among these women. Only 25.5% had a mean perception of susceptibility and no woman reached the scores for high perception of susceptibility.

Regarding the score of perception of severity, 74.4% of women had an average perception of

severity; 15.0% had low perception of severity; and only 10.4% hit representative score of high perception of severity. As for the perception of benefits with the exam for the prevention of CC, it is found that 52.8% have average perception of the benefits gained from the examination, 43.7% have high perception of the benefits of the examination and 3.5%, low perception of benefits with the completion of the test.

Regarding the perception of barriers to do the exam, were found the following results: 51.4% have moderate perception of barriers; 47.9% low; and only 0.7% high perception of the existence of barriers to prevent the CC through periodic Pap smear test. To verify the possible association between the variables of the HBM, socioeconomic characteristics and risk factors was performed a Statistical analysis with multiple correspondences. Table 2 shows the dimensions in which happened higher association, also bringing the selfvalues, the individual percentage and the accumulated percentage of variability explained by each dimension.

The results, presented in Figure 1, show association between low perception of susceptibility, moderate perception of severity, moderate perception of benefits, low and moderate perception of barriers with no income or income of up to three minimum wages, less education than nine or nine to twelve years, not using condoms during sex and may have done or not preventive test of CC before. Also, it was found an association between moderate perception of susceptibility, low and high perception of severity, high perception of benefits with more than 12 years of study, income from four to nine or more than 10 minimum wages and the use of condoms during sexual intercourse.

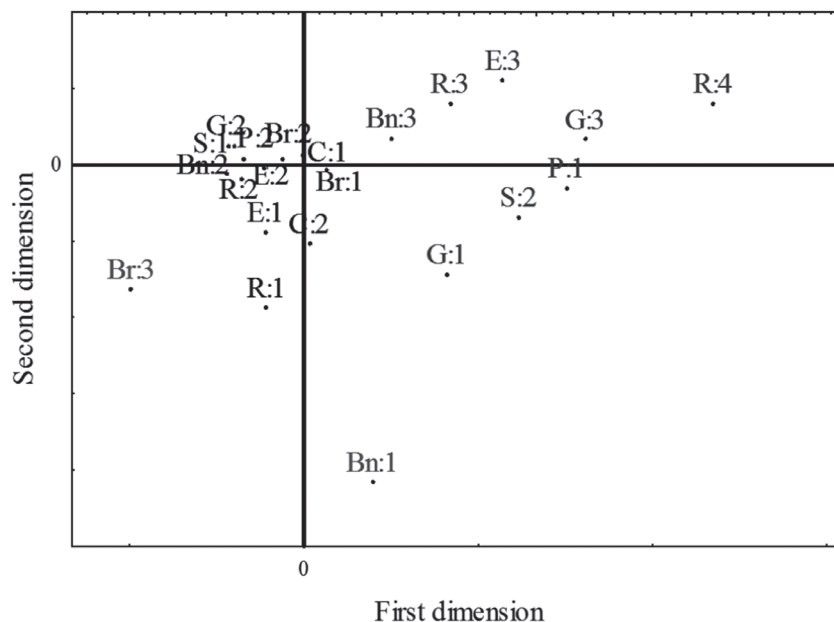
The variables high perception of barriers and low perception of benefits, both in relation to the prevention of cervical cancer test showed sparse responses distributed in diluted form, so it does not have associations with the others variables. Among possible factors that would lead to difficulties in the examination, 29.4% of the interviewed women said that there is need

for long wait. To fill many forms was pointed out for 19.5% as factor which make harder to do the test. 20.0% of these women said they felt

or believe they may feel pain during the exam. Finally, 41.7% reported feelings of shame with the professional while him perform the test.

**Table 2.** Selfvalues, percent of variance by size of association and cumulative percentage between the variables of the study

Dimensions	Selfvalues	% Explanation	% Accumulated
1	0.386657	22.09	22.09
2	0.229392	13.11	35.20
3	0.178903	10.22	45.42
4	0.156375	8.94	54.36



**Figure 1.** Perceptual map referring to the correspondence between the variables of the study

**Annotations:** S1, S2: respectively low and moderate susceptibility; G1, G2, G3: respectively low, moderate, high severity; Bn1, Bn2, Bn3: respectively low, moderate and high perception of benefit; Br1, Br2, Br3: respectively low, moderate and high barrier; R1, R2, R3, R4: relative to income, respectively, with no salary, up to three minimum wages, between four and nine

minimum wages, 10 or more minimum wages; C1, C2: anterior performing of cervical cytology, respectively, yes and no; P1, P2: use of condoms during sexual intercourse, respectively, yes and no; E1, E2, E3: related for the years of study, respectively, less than nine years, between nine and 12 years and over 12 years.

## Discussion

Most women in this sample relate family income below three minimum salaries. As for the years of study, the most significant portion does not have higher education. Rafael and Correa found results like these in their study, when they evaluated the profile of women assisted by public health services.<sup>11,12</sup> Only 17.83% of the interviewed women said they use condoms during sexual intercourse, a fact that drew great attention, since it is one of the few methods to prevent HPV infection, said to be primarily responsible for the development of cervical cancer. The largest association of condom use with higher income and education index in the sample studied was not surprising because other studies have highlighted the increased use of condoms in these conditions.<sup>13</sup>

The frequency of the test performance revealed a positive result, showing that at least 80.7% of women performed the test at intervals ranging from six months to three years, noting that the Ministry of Health recommends that after two consecutive tests, in the interval of one year and normal results, the frequency of the test be of three years.<sup>1</sup>

As for the aspects evaluated by the Health Belief Model, it is desirable that the scores of perception of susceptibility, severity and benefits are high, as the score for the perception of barriers should be low.<sup>14</sup> However, it was found that the perception of susceptibility among interviewed women was low for the vast majority, and the severity, moderate for the majority, and perception of benefits and barriers moderate to more than 50% of the population, but, with a significant percentage of the desirable scores. This was observed similarly by Rafael in his study in Rio de Janeiro, due to the low sense of susceptibility associated with a higher awareness of the benefits of the prevention test.<sup>8</sup> According to these results and based on the precepts HBM can be stated that among the interviewed women did not identify the desirable trend to preventive behaviors, especially when were associate these results to the low use of condoms during sexual intercourse.

Another factor that may be related to the data found in this study is that only 15% of these women had cases of breast or cervical cancer in the family, which may be contributing to the unwanted level of perception of susceptibility. It was also verified by the use of condoms during sexual intercourse teaming up more strongly to the group with the highest perception susceptibility, severity, benefits with the test, lower perception of barriers and higher education levels and family income as already was told. It is showing with this, the importance of the human and population development not only for prevention of cervical cancer, but also to sexually transmitted diseases.

When multiple correspondence between HBM parameters and other variables (Figure 1) was performed, was found that women with low perception of susceptibility were associated with scores closer of the desirable regarding severity, benefits and barriers. This may lead one to believe that the low perception of susceptibility is associated with the fact that some women, perform or have performed at least once in a lifetime the test to prevention of CC.

Furthermore, the results regarding the association between the variables shows that women with higher perception of susceptibility, severity of the disease and high perception of benefits with the performance of the test, have more formal education, higher income and increased use of condoms during sexual intercourse.

Nevertheless, it is highlighted the proximity of the women who had did cytology with the first group of this graph. This may be due to the fact that the vast majority of studied women is found in other variables groups, low income and low education, which pulls the topic previous cytology for the large group in which they belong.

A study conducted in the state of Pernambuco, regarding the coverage of the Pap smear test, showed that the examination was more frequent among women with higher income and education, thus showing similarity with this study as the appreciation of the test.<sup>15</sup> The largest association between the test and higher income and educational level was also observed

by other authors.<sup>16-18</sup> The analysis of multiple or multivariate correspondence proved to be of great value in achieving the objectives of this study, because it allows the analysis of association between different categorical variables, this method is often used in other studies.<sup>9,19</sup>

Regarding to the answers that show possible barriers to the cytology test of the cervix, were found that a study realized in Piauí in 2007, through qualitative method, had already found from the women's discourse the importance of feelings of fear, shame and pain as impediments to the realization of the test.<sup>20</sup> Similarly, research in the state of Ceará, also found that shame is the feeling perceived more strongly among women, also found that the nervousness and fear were present among women before, during and after the test.<sup>21</sup> Other studies, through quantitative method, also found high percentages of responses that presented as barriers to the test the fear of it and the shame of examiner.<sup>8,18</sup>

With the conclusion of this study, it appears that individual aspects, such as women's knowledge about the disease and its prevention, previous experience with the test and knowledge of the body, are crucial in any decision making process involving the carrying out the screening. Factors involving health services, as well as continuity of care, relationship between professionals and women, reducing bureaucracy and increasing the agility of the process can also reduce the barriers identified by women. It is believed that the Family Health Strategy is able to improve the framework of cervical cancer in Brazil. However, it is recognized the limitation of this study and is recommended the conduction of researches using different methodologies, with a view to understanding particular aspects involved in the prevention or absence of cervical cancer.

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