

EPIDEMIOLOGICAL PROFILE OF WOMEN WITH HUMAN PAPILLOMAVIRUS WHO USE THE PUBLIC HEALTH SERVICE

PERFIL EPIDEMIOLÓGICO DE MULHERES COM PAPILOMAVÍRUS HUMANO QUE UTILIZAM O SERVIÇO PÚBLICO DE SAÚDE

PERFIL EPIDEMIOLÓGICO DE MUJERES CON PAPILOMA VIRUS HUMANO QUE UTILIZAN EL SERVICIO PÚBLICO DE SALUD

Lígia Souza Machado¹
Mario Cezar Pires²

How to cite this article: Machado LS, Pires MC. Epidemiological profile of women with human papillomavirus who use the public health service. Rev baiana enferm. 2017;31(4):e22135.

Objective: To get to know the profile of women with genital human papillomavirus and to investigate the knowledge about the infection and its prevention. **Method:** Descriptive study based on the application of a structured form to a sample of 49 women. All patients had pap smear results showing low-grade intraepithelial lesions. The data were treated by means of a descriptive statistical analysis using the EPI-INFO® 7.1.4 software. **Results:** Most of the women studied were young, single adults with a high school education. The infection occurred in participants with family incomes of less than five minimum wages per month. More than 70 percent of them reported taking pap smear tests and test periodicity. **Conclusion:** The data showed the occurrence of human papillomavirus in women aged 20 and 40 years, and the infection was more frequent among those who became sexually active after 15 years of age.

Descriptors: Human papillomavirus. Women's health. Public Health.

Objetivo: conhecer o perfil de mulheres com papilomavírus humano genital e investigar o conhecimento sobre a infecção e sua prevenção. Método: estudo descritivo através da aplicação de formulário estruturado para uma amostra de 49 mulheres. Todas apresentaram resultado de papanicolaou com lesão intraepitelial de baixo grau. Os dados foram tratados por meio de análise estatística descritiva utilizando o programa EPI-INFO® 7.1.4. Resultados: as mulheres estudadas, em sua maioria, eram adultas jovens, solteiras e com ensino médio. A incidência da infecção ocorreu em participantes com renda familiar inferior a cinco salários mínimos por mês. A realização do exame de papanicolaou e sua periodicidade foi referida por mais de 70% delas. Conclusão: os dados apontaram ocorrência do papilomavírus humano em mulheres entre 20 e 40 anos de idade, com maior frequência naquelas que iniciaram a atividade sexual após os 15 anos de idade.

Descritores: Papilomavírus humano. Saúde da mulher. Saúde Pública.

¹ Nurse and Master in Health Sciences. Professor of the Mario Schenberg College's School of Nursing and of the São Caetano do Sul Municipal University. São Caetano do Sul, São Paulo, Brazil. nsligia@hotmail.com

² Dermatologist. Ph.D. and Master in Clinical Medicine. Full Professor of the Graduate Program of the Master's and Doctorate Degree in Health Sciences program of the Institute of Medical Assistance to the Public Servant of the State of São Paulo and of the University of São Paulo. São Paulo, Brazil. mariocezarpirez@me.com

Objetivo: conocer el perfil de mujeres con papiloma virus humano genital e investigar el conocimiento sobre la infección y su prevención. Método: estudio descriptivo a través de la aplicación de formulario estructurado para una muestra de 49 mujeres. Todas presentaron resultado de Papanicolaou con lesión intraepitelial de bajo grado. Los datos fueron tratados mediante análisis estadístico descriptivo utilizando el programa EPI-INFO® 7.1.4. Resultados: las mujeres estudiadas, en su mayoría, eran adultas jóvenes, solteras y con enseñanza media. La incidencia de la infección ocurrió en participantes con ingreso familiar inferior a cinco salarios mínimos por mes. La realización del examen de Papanicolaou y su periodicidad fue referida por más del 70% de ellas. Conclusión: los datos apuntaron la ocurrencia del papiloma virus humano en mujeres entre 20 y 40 años de edad, con mayor frecuencia en aquellas que iniciaron la actividad sexual después de los 15 años de edad. Descriptores: Papiloma virus humano. Salud de la mujer. Salud pública.

Introdução

Human papillomavirus (HPV) is the most common sexually transmitted infection (STI) in the world. It can infect skin cells or cause a wide variety of diseases, such as cervical cancer⁽¹⁾.

The literature describes several aspects of the human papillomavirus infection. It causes common and genital warts, and is a global virus that has no preference in terms of gender, age or race, rendering it a serious public health issue due to its prevalence and dissemination⁽²⁾.

More than 100 types of HPV have been identified, of which 40 can infect the female and male anogenital region⁽³⁾.

It is estimated that most women are infected with genital HPV at the onset of sexual activity, its incidence becomes evident in the juvenile phase of the female population aged 20 to 29 years, and it decreases with advancement of maturity; the second peak of the disease, meanwhile, is among individuals aged 50 to 60 years⁽⁴⁾.

Brazil is one of the world leaders in the incidence of genital HPV. The World Health Organization (WHO) assessed the number of individuals infected with HPV via sexually transmitted infection in the sexually active population, and 685,400 cases are reported each year. Data show that this STI is one of the diseases that most affects young women aged 15 to 25 years. Although it is an infectious disease that also occurs in males, we found that there are fewer cases among men because of their low levels of demand for treatment and because of prejudice⁽⁵⁾.

Some authors report that most infections caused by genital HPV regress naturally, and often go unnoticed by the woman⁽⁶⁾. Forms of

contact include latent infection, as the virus may remain “dormant” within the cell for many years; subclinical infection, when there is no visible lesion and clinical infection, and there is also the form in which there are few visible clinical lesions, such as warts, papules or maculae.

In the last decade, persistent infections with high oncogenic risk subtypes of the HPV virus are associated as a necessary, but not sufficient cause for the development of cervical cancer. In addition to genital HPV infection, there are classic risk factors that may be related to the origin of this carcinoma, such as the prolonged use of oral contraceptives, immunosuppression, the early onset of sexual activity, having multiple sexual partners throughout one’s life, and high parities (non-surgical deliveries), nutritional deficiencies, smoking, HIV and other sexually transmitted infections^(7,8).

The WHO estimates that 291 million women worldwide are carriers of the genital HPV virus, 32 percent of whom are infected with types 16 and 18⁽⁹⁾.

The National Cancer Institute (INCA) estimates there were 527,000 cases of cervical cancer in women worldwide in 2012. It also contributes significantly to the burden of the disease in women, being the second most common and the second cause of death from cancer among women⁽¹⁰⁾. The main risk factor for cervical cancer is infection with human papillomavirus.

It is assumed that at least half of all sexually active people will come into contact with the genital HPV virus. The use of the contraceptive method and the progress of the feminist movement have greatly contributed to female sexual behavior, leading women to become sexually active

prematurely and making them increasingly vulnerable to sexually transmitted infections⁽¹⁾.

Epidemiological studies on the infection^(3,4) have documented a substantial preponderance in which an early onset of sexual activity and a low adherence to condom use are risk factors for both infection and reinfection by HPV. In view of the above, the purpose of this study was to get to know the profile of women with genital human papillomavirus and to investigate their knowledge about the infection and its prevention, thus contributing to identify the context of the actual situation of STIs in Brazil.

In addition to these considerations, it is worth mentioning that infection with HPV is very frequent, and precursor lesions may develop, which, if not identified and treated, may progress to cancer, especially in the cervix.

Thus, this study may allow for the construction of strategies for the development of sexual education in public services and help clarify the population about the importance of using condoms in all sexual relations.

Method

This is a retrospective, descriptive study with a quantitative approach carried out at a central health unit in the city of Ribeirão Pires, state of São Paulo. This unit is a reference for the referral of all cytopathological tests showing cellular abnormalities in the municipality.

The population's main form of access to the public health system in Ribeirão Pires is through the five Basic Health Units (UBS) and the five Family Health Units (USF) providing basic care in the city, at which routine care is given by nurses, general practitioners, pediatricians, and gynecologists. A few of them also have psychologists and dentists available.

The study's target population consisted of 62 women found in the medical records of the Cervical Cancer Information System (Siscolo). The inclusion criteria for this study were the results of a cytopathological test showing cellular abnormalities compatible with HPV; additionally, the person had to reside in the municipality and

have carried out the preventive examination in the municipality's public network between 2012 and 2014. Women with immunodeficiencies (including HIV infection), CIN 2 and CIN4 pap smear results, and an inconclusive medical diagnosis were excluded from this study.

To undertake the survey, telephone contact was made, and an appointment scheduled to collect the information at the health unit, in a private room. In addition, a few interviews were conducted at some of the women's homes. The study was conducted between October and December 2015. Of the 62 women, 49 responded to the forms.

Due to the lack of data, a structured form was used to collect the information that was not found in the medical records, such as personal identification, sociodemographic and gynecological data, and knowledge about the infection.

The forms were self-administered, and the researcher offered help if the person had questions. However, the questionnaire did not involve the direct participation of other people to avoid possible constraints and minimize possible distress. The results were organized in the EPI INFO® software, release 7.1.4 which is in the public domain, and transported to Excel 2016® spreadsheets. The data were analyzed using descriptive statistics, organizing numerical data into absolute and percentage frequency distribution tables.

It should be emphasized that the study was analyzed and approved by the Research Ethics Committee of the Institute of Medical Assistance to the Public Servant of the State of São Paulo (IAMSPE-SP), under case number 348,886. All the data obtained were treated confidentially to ensure participant anonymity. Before answering the forms, clarifications were provided to the participants concerning the confidentiality and scientific nature of the study and signed the Term of Free and Informed Consent (TFIC).

Results

Participating in this study were 49 women with test results showing low-grade intraepithelial lesions. The mean age of the group was 31.61 years, corresponding to 65.30 percent.

There was a significant number of unmarried women, 26 (53.06%), a higher prevalence of this infection among women enrolled in high school 20 (40.82%), and a population of low income women 42 (85.72 %) (Table 1).

Table 2 features the obstetric history. As for the number of children, 25 (51.02%) reported having one or more children; 30 (61.22%) used some type of contraceptive method; 44 (89.80%) started their sexual lives after 15 years of age, and two thirds of the women, 34 (69.39%), stated that they do not usually use condoms during intercourse.

Information on the gynecological-obstetric data is featured in Table 3. Most interviewees, 41 (83.67%), do preventive screening, and 37 (75.51%) of them did so regularly. However, it should be emphasized that two (4.08%) said they never took the test, and that they only went to the health unit due to clinical manifestations suggestive of STI. The study showed that 45 (91.84%) of the women reported that their menstrual cycles are regular.

Table 1 – Distribution of women infected with human papillomavirus (HPV) based on socioeconomic and demographic variables. Ribeirão Pires, São Paulo, Brazil, 2015. (N = 49)

Variable	N	%
Age group		
15–20 yoa	8	16.33
21–30	16	32.65
31–40 yoa	16	32.65
41–50 yoa	6	12.24
> 51 years	3	6.12
Marital status		
Married	12	24.49
Separated	8	16.33
Single	26	53.06
Widower	3	6.12
Schooling		
No schooling	1	2.04
Elementary Education	13	26.53
High School	20	40.82
College	15	30.61
Family income (MW)*		
< 5 wages	42	85.71
> 5 wages	7	14.29

Source: Prepared by the author

*MW = Minimum wage (Considered the Brazilian minimum wage in effect in the year of 2015, or R\$788.00).

Table 4 features data on genital HPV; approximately half of the interviewees claimed to be aware of it, 27 (55.10%); however, we highlighted eight (16.33%) who said they had never heard about HPV. Regarding virus transmission, 44 (89.80%) women were aware of the transmission of the disease, reporting that it was a sexually transmitted disease/virus, a possible cause of cervical cancer, and that the virus affects only women.

Table 2 – Main risk factor variables among women infected with human papillomavirus (HPV). Ribeirão Pires, São Paulo, Brazil, 2015. (N = 49)

Variable	N	%
Children		
No	24	48.98
Yes (1–3 children)	25	51.02
Use of a contraceptive method		
No	19	38.78
Yes	30	61.22
Smoking		
No	37	75.51
Yes	12	24.49
Onset of sexual activity		
< 15 years	5	10.20
> 15 years	44	89.80
Use condoms		
No	34	69.39
Yes (in all sexual relations)	15	30.61

Source: Prepared by the author

Table 3 – Gynecological-obstetrical data of women infected with human papillomavirus (HPV). Ribeirão Pires, São Paulo, Brazil, 2015. (N = 49)

Variable	N	%
Preventive examination		
Yes	41	83.67
No	8	16.33
Pap smear periodicity		
Never did one	2	4.08
1 year	37	75.51
2 years	10	20.41
3 years	0	0
Menstrual cycle		
No	4	8.16
Yes	45	91.84

Source: Prepared by the author

Table 4 – Degree of knowledge about human papillomavirus (HPV) among infected women. Ribeirão Pires, São Paulo, Brazil, 2015. (N = 49)

Variable	N	%
Is aware of HPV		
Never heard about it	8	16.33
I have heard about it	14	28.57
I know it	27	55.10
How it is contracted		
Sharing cutlery	0	0
Sexual route	49	100
Frequenting the same space as an infected person	0	0
Skin contact	4	8.16
Other	0	0
No opinion	1	2.04
HPV infection affects		
Only men	0	0
Only women	24	48.98
Men and women	18	36.73
No opinion	7	14.29
HPV has symptoms		
Always symptomatic	7	14.29
Sometimes symptomatic	24	48.98
Never symptomatic	6	12.24
No opinion	12	24.49
Prevention of HPV		
Other methods	0	0
Condom	49	100

Source: Prepared by the author.

Discussion

Women have been shown to be especially vulnerable to sexually transmitted infections. Most of them are contaminated at full reproductive age. The best way to detect genital HPV infections in women is through gynecological examinations, using colposcopy and collecting pap smear material⁽¹²⁾.

Cervical cancer has been growing significantly in different Brazilian territories, and this disease is mostly associated with human papillomavirus infection⁽¹³⁾. Insofar as the results are concerned, the mean age of women with cytopathologic changes suggestive of HPV infection was 31.6 years, ranging from 21 to 40 years: 32 (65.30%)⁽¹⁴⁾. Comparing with the literature, a study carried out in the state of Pará presented a similar picture, with most women in the 21–40-year age

group. Meanwhile, in Uruguaiana, in the state of Rio Grande do Sul, this association was not confirmed, since genital HPV infection prevailed among younger women, aged fewer than 25 years^(14,15). We believe that the differences between the studies are due to the unique characteristics of the respective populations, which have their own cultural aspects and different sexual habits.

In this study, we noted human genital papillomavirus was frequent in a portion of the single women. This suggests that they may have more sexual partners and, consequently, more exposure, especially to infectious diseases transmitted through sexual intercourse. A similar result was also noted in the United States⁽¹⁶⁾. However, a survey conducted in the state of São Paulo, and another one in a South Asian country, Bangladesh, showed a higher percentage among married women. It is assumed that married women, for considering their relationship as stable, focus on other aspects, such as the use of contraceptives, birth control or tubal surgery, and do not use condoms. They postulate that they trust their companions' loyalty, and use no barrier method^(17,18). We believe that due to the controversies found in the different studies, marital status is not the most relevant factor for contamination with genital HPV.

In our study, we found a higher prevalence of this infection among women with high school educations. From this perspective, several authors have pointed to a higher risk for HPV infections among women with lower levels of education⁽¹¹⁾. These data show an obstacle to determining an isolated finding, since there is likely to be an association with other risk factors. We believe that educational level differences are related to the study sites' conditions, and cannot be correlated with the presence of HPV.

Insofar as family income is concerned, wage diversity is a characteristic of the Brazilian population. The study brought a picture of women with incomes between one and three minimum wages, a low socioeconomic level, despite their level of schooling.

We found that many low-income women, in general, use the basic health unit. A few authors have analyzed the family income of women with genital HPV and have concluded that most of them were low-income women, largely earning one to three minimum wages. These data are in line with our study^(19,20,21).

Regarding gynecological-obstetric data, some studies have related multiparity with a risk of infection by genital HPV and, consequently, cervical cancer⁽¹¹⁾. In this study, however, it was noted that slightly more than half of the women had one or more children, and there was no significant difference with the nulliparous women. Although not statistically significant, we highlight a slightly larger rate of HPV infection among women with one, two, and three children. A possible explanation for this data may be the lower age range of the women in the present study compared to those of other authors. In Nova Iguaçu, in the metropolitan region of Rio de Janeiro, it was noted that most of the interviewees had one or more children. A few studies justify such an outcome based on the fact that, with multiparity, the transitional epithelium of the ectocervix would be maintained for many years, leaving it more exposed to the virus; this was not proved in this survey, however⁽²²⁾.

We emphasize that some of the interviewees confirmed they used oral contraceptives; however, we did not find a relationship between oral contraceptives (OCs) and a higher risk of infection. Oral contraceptive use over extended periods of time may represent a risk factor for cervical cancer, considering it was twice as high among women who used these drugs for more than 10 years⁽²³⁾. Nevertheless, some authors noted the opposite: Women using contraceptives had a lower risk of cervical cancer⁽²⁴⁾. In the literature surveyed, there is still a lot of conflict in the relationship between oral contraceptive use and genital HPV infection. Currently, the most used contraceptive method in Brazil is the oral one, which justifies the higher percentage found in this study.

Early onset of sexual activity could be considered a risk factor for genital HPV infection,

probably due to the longer exposure time⁽¹⁰⁾. In this study, however, the highest prevalence of HPV-infected women was found among those who became sexually active after 15 years of age. Again, it is thought that these differences must be due to characteristics peculiar to the local population.

Although condom use is recommended throughout sexual intercourse, with or without penetration, it does not fully protect against HPV infection because it does not cover all areas likely to be infected⁽²⁵⁾. This study showed a large number of women did not wear condoms often. This data suggest that they do not use such protection when the relationship becomes more serious. As a result, they are more likely to be infected with the HPV virus, given that stable relationships do not guarantee that their partners will not become infected with HPV.

This study showed high adherence to the pap smear test among the interviewees. Regarding periodicity, the interviewees said that they take the test annually. This finding contrasts with studies carried out in Niterói, Rio de Janeiro, and Jamaica, in which women did not fully adhere to the preventive testing^(22,23). The WHO considers an 80 percent pap smear coverage rate in the target population, including in the age group between 35 and 59 years, adequate. Thus, only with this scope would it be satisfactory to have an impact on women's health indicators. Also emphasized is the importance of screening policies for cervical lesions among women in this age group and, thus, the onset of lesions that could progress to cancer could be prevented⁽¹³⁾.

Regarding the menstrual cycle, it may or not be a barrier to the appearance of an oncotic cytology exam, because it sometimes coincides with the collection schedule. These results showed that women had regular menstrual cycles. The issue was raised to identify the women's adherence to the known method, such as oncotic colpocytology, performed in a timely manner in family planning and prenatal and gynecological consults, among others. Results similar to those of the present study were found in Belo Horizonte, state of Minas Gerais⁽⁷⁾. It is not possible

to believe that this factor is relevant to genital HPV infection, as it only had some influence on the test collection date.

The question about knowledge about HPV infection and its transmission allowed us to compare this information with a study carried out in Uberaba, state of Minas Gerais, which had results similar to ours⁽⁶⁾. Most of the women had knowledge about the infection and how it is transmitted, stating that it is a virus-caused and sexually transmitted disease with potential to lead to cervical cancer. On the other hand, a large proportion of women interviewed believed that HPV infection did not affect men, only women, although they had responded that they knew about genital HPV. These statements show the misinformation there is between knowledge and information transmitted, which, in turn, leads to failures in the STI prevention educational process because, although they were aware of the virus, we noted that a significant portion of them did not use condoms to protect themselves from infections.

When we analyzed the participants' answers about HPV prevention, there was a unanimous assertion that condom use in intercourse is the best precautionary method. Even so, many do not use them. A study carried out in Uberaba showed women acknowledged condom use as the best HPV prevention strategy⁽⁶⁾. One assumption for not using condoms is the high degree of trust the person has in her partner. Although condom does not fully prevent HPV infection, it is the most indicated method. Women recognize that using condoms is the best method to prevent HPV infection; however, they consider condoms a nuisance and that they hinder the couple's sexual intimacy. We realize, therefore, that there are still women who have misleading or limited information about this virus.

Research on the prevalence of HPV infection in the female population is important to assist in mapping the situation in our country. New studies in other Brazilian territories will be important to measure in which regions it is most urgent to promote strategies for the prevention of HPV infection.

Conclusion

Based on this study's results, we sought to get to know the profile of women with genital HPV who are users of a primary health unit in the city of Ribeirão Pires, state of São Paulo. Based on the results, it was possible to determine that the infection affects more single women, 26 (53.06%), of low socioeconomic levels, 42 (85.71%), and with high school educations, 20 (40.82%).

The women showed some knowledge about the HPV infection, the form of transmission, and preventive measures. However, this leads us to infer that they do not have adequate knowledge about HPV and its consequences due to practices that expose them to the threat of infection. Regarding prevention, we found that many women do not use condoms regularly. These elements suggest that they normally use condoms during their first sexual intercourse, but they no longer use such protection when the relationship becomes stable. As a result, they are more exposed to HPV and other vaginal infections.

This reality corroborates the proposal that, because it has been divulged through the various news media (newspapers, magazines, radio, Internet, among others), HPV is currently part of public health issues and a cause for concern, not only among health professionals, but also the population in general.

The results described in this study lead us to reflect on the need for educational activities aimed at clarifying the risk factors related to sexual behavior and increasing information about the virus. These could be efficient strategies to control HPV transmission and to have safe sex. We believe that this measure would have a positive impact on health, since HPV infection is a precursor to cervical cancer, which is highly prevalent in the population.

Collaborations

1. design, project, analysis and interpretation of data: Lígia Souza Machado, Mario Cezar Pires e Ivone Farias Cunha

2. article writing and critical review of intellectual content: Lígia Souza Machado e Mario Cezar Pires

3. final approval of the version to be published: Lígia Souza Machado e Mario Cezar Pires

References

1. Coser J, Boeira TR, Wolf JM, Cerbaro K, Simon D, Lunge VR. Cervical human papillomavirus infection and persistence: a clinic-based study in the countryside from South Brazil. *Braz joun infectdis*. 2016;20 (1):61-8.
2. Costa LA, Goldenberg P. Papilomavírus humano (HPV) entre jovens: um sinal de alerta. *Saude Soc*. 2013;22(1):249-61.
3. Entiauspe LG, Silveira M, Nunes EMN, Basgalupp SP, Stauffert D, Dellagostin OA et al. High incidence of oncogenic HPV genotypes found in women from Southern Brazil. *Braz J Microbiol*. 2014;45(2):689-94.
4. Pimenta ATM, Melli PPS, Duarte G, Quintana SM. Conhecimento de mulheres sobre alguns aspectos do papilomavírus humano. *Medicina (Ribeirão Preto)*. 2014;47(2):143-8.
5. Ministério da Saúde (BR), Instituto Nacional de Câncer José Alencar Gomes da Silva. Estimativa 2014: incidência de câncer no Brasil. Rio de Janeiro: Instituto Nacional de Câncer José Alencar Gomes da Silva; 2014.
6. Freitas WR, Fedrizzi EN, Aguiar FG. Conhecimento entre estudantes universitários e funcionários de unidades locais de saúde sobre papilomavírus humano e câncer cervical e suas implicações para estratégias de saúde pública e vacinação. *DST J Bras Doenças Sex Transm*. 2015;27(1-2):40-47.
7. Souza AF, Costa LHR. Conhecimento de mulheres sobre HPV e câncer do colo do útero após consulta de enfermagem. *Rev Bras Cancerol*. 2015;61(4):343-50.
8. Marçal JA, Gomes LTS. A prevenção do câncer do colo do útero realizada pelo enfermeiro na Estratégia Saúde da Família: revisão integrativa da literatura. *Rev Eletron Acervo Saude*. 2013;5(2):479-89.
9. Vaccarella S, Lortet-Tieulent J, Plummer M, Franceschi S, Bray F. Worldwide trends in cervical cancer incidence: impact of screening against changes in disease risk factors. *Eur J Cancer*. 2013;49(15):3262-73.
10. Instituto Nacional do Câncer — INCA. Estimativa 2016: Incidência do Câncer no Brasil. Rio de Janeiro: Instituto Nacional do Câncer; 2015.
11. Zardo GP, Farah FP, Mendes FG, Franco CAGS, Molina GVM, Melo GN, Kusms SZ. Vacina como agente de imunização contra o HPV. *Cienc Saúde Coletiva*. 2014;19(9):3799-808.
12. Santos RFA, Cordeiro CA, Braga LS, Moraes MN, Araujo VS, Dias MD. Conhecimento de idosas sobre o exame citopatológico. *Rev Enferm UFPE*. 2015;9(2):517-25.
13. Baloch Z, Yue L, Yuan T, Feng Y, Wenlin Tai W, Liu Y et al. Status of human papillomavirus infection in the ethnic population in Yunnan Province, China. *Bio Med Res Inter*. 2015;(2015):10.
14. Rocha SMM, Bahia MOB, Rocha CAM. Perfil dos exames citopatológicos do colo do útero realizados na Casa da Mulher, Estado do Pará, Brasil. *Rev Pan-Amaz Saúde*. 2016;7(3):51-5.
15. Ströher DJ, Aramburu TDB, Abad MAS, Nunes VT, Manfredini V. Perfil citopatológico de mulheres atendidas nas Unidades Básicas do Município de Uruguaiana, RS. *DST - J Bras Doenças Sex Transm*. 2012;24(3):167-70.
16. Shi R, Devarakonda S, Liu L, Taylor H, Glenn Mills G. Factors associated with genital human papillomavirus infection among adult females in the United States, NHANES 2007–2010. *BMC Res Notes*. 2014;(7):544.
17. Gaspar J, Quintana SM, Reis RK, Gir E. Fatores sociodemográficos e clínicos de mulheres com papilomavírus humano e sua associação com o vírus HIV. *Rev Latino-Am. Enferm*. 2015;23(1):74-8.
18. Nahar Q, Sultana F, Alam A, Islam JY, Rahman M, Khatun F et al. Genital human papillomavirus infection among women in Bangladesh: findings from a population-based survey. *PLoS ONE*. 2014;1(9).
19. Coelho CMC, Verde RMCL, Oliveira EH, Soares LF. Perfil epidemiológico de exames citopatológicos realizados no LF de Floriano, Piauí. *Rev Bras Farm*. 2014;95(1):459-73.
20. Oliveira Gr, Vieira VC, Barral MFM, Döwich V, Soares MA, Gonçalves CV et al. Fatores de risco e prevalência da infecção pelo HPV em pacientes de unidades básicas de saúde e de um hospital universitário do Sul do Brasil. *Rev Bra. Gineco. Obstet*. 2013;3 (5) 226232.

21. Girianelli VR, Gamarra CJ, Azevedo e Silva G. Os grandes contrastes na mortalidade por câncer do colo uterino e de mama no Brasil. *Rev Saude Publica*. 2014;48(3):459-67.
22. Vargens OMC, Silva CM. Tendo que se adaptar a uma realidade incontestável e inesperada: ser portadora do HPV. *Rev. Enferm (UERJ)*. 2014;22(5):643-8.
23. Lewis-Bell K, Luciani S, Unger ER, Hariri S, McFarlane S, Steinau M et al. Genital human papillomaviruses among women of reproductive age in Jamaica. *Rev Panam Salud Publica*. 2013;33(3):159-65.
24. Demir ET, Ceyhan M, Simsek M, Gunduz T, Arlier S, Aytac R et al. The prevalence of different HPV types in Turkish women with a normal Pap smear. *J Med Virol*. 2012;84(8):1242-7.
25. Lam JU, Rebolj M, Dugué PA, Bonde J, Von Euler-Chelpin M, Lynge E. Condom use in prevention of Human Papillomavirusinfections and cervical neoplasia: systematic review of longitudinal studies. *J Med Screen*. 2014;21(1):38-50.

Received: April 29, 2017

Approved: November 23, 2017

Published: January 25, 2018