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ORIGINAL ARTICLE

PREVENTION OF CERVICAL CANCER AND THE EXPANSION OF THE RISK AGE PREVENÇÃO DO CÂNCER DE COLO UTERINO E A AMPLIAÇÃO DA FAIXA ETÁRIA DE RISCO PREVENCIÓN DEL CÁNCER DEL CUELLO UTERINO Y LA EXPANSIÓN DE LA EDAD DE RIESGO

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ABSTRACT

Objective: verifying the coverage of Pap of cervical cancer and the need to expand the age range recommended for prevention. **Method:** an exploratory, documentary study with a quantitative approach, performed in FHUs of João Pessoa/Paraíba, with analysis in R software, of 1387 records of Pap tests. The research project was approved by the Research Ethics Committee, CAAE No 0568.0.126.000.10. **Results:** Pap coverage was of 26,59%. *Candida sp* was more prevalent in women < 25 years old, has *Gardnerella vaginalis*, *Trichomonas vaginalis* and HPV occurrence was similar in women < 25 and 25-59 years old. **Conclusion:** Pap coverage was lower than that recommended preventive actions and did not meet local needs, since the two groups were equally vulnerable to cervical cancer, indicating the need to expand the recommended age range. **Descriptors:** Prevention of Cervical Cancer; Vaginal Swab; Women's Health.

RESUMO

Objetivo: verificar a cobertura do exame preventivo de câncer do colo de útero e a necessidade de ampliar a faixa etária preconizada para prevenção. **Método:** estudo exploratório, documental, com abordagem quantitativa, realizado nas USFs de João Pessoa/PB, com análise no software R, de 1387 registros de exames citológicos. O projeto de pesquisa teve a aprovação do Comitê de Ética em Pesquisa, CAAE nº 0568.0.126.000.10. **Resultados:** a cobertura do Papanicolaou foi de 26,59%. A *Candida sp* foi mais prevalente nas mulheres <25 anos, já *Gardnerella vaginalis*, *Trichomonas vaginalis* e HPV a ocorrência foi semelhante nas mulheres <25 e de 25-59 anos. **Conclusão:** a cobertura do Papanicolaou foi inferior ao preconizado e as ações preventivas não atenderam as necessidades locais, pois os dois grupos apresentaram-se igualmente vulneráveis ao câncer de colo de útero, denotando a necessidade de ampliar a faixa etária preconizada. **Descritores:** Prevenção de Câncer de Colo Uterino; Esfregaço Vaginal; Saúde da Mulher.

RESUMEN

Objetivo: verificar la cobertura de Papanicolaou de cáncer de cuello uterino y la necesidad de ampliar el rango de edad recomendado para la prevención. **Método:** estudio exploratorio, documental con un enfoque cuantitativo, realizado en USFs de João Pessoa/Paraíba, con el análisis en el software R, de 1387 registros de las pruebas de Papanicolaou. El proyecto de investigación fue aprobado por el Comité de Ética de la Investigación, CAAE No 0568.0.126.000.10. **Resultados:** la cobertura de Papanicolaou fue de 26,59%. *Candida sp* fue más frecuente en las mujeres < 25 años, ya *Gardnerella vaginalis*, *Trichomonas vaginalis* y la aparición del VPH fue similar en mujeres < 25 y 25-59 años. **Conclusión:** la cobertura de Papanicolaou fue inferior que el recomendado y las acciones preventivas no han satisfecho a las necesidades locales, ya que los dos grupos eran igualmente vulnerables al cáncer de cuello uterino, lo que indica la necesidad de ampliar el rango de edad recomendado. **Descriptor:** Prevención de Cáncer de Cuello Uterino; Torunda Vaginal; Salud de la Mujer.

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INTRODUCTION

Cancer of the cervix is the only type of cancer that has technology able to achieve early detection, which associated with knowledge about the risk factors, the most advanced technological means for diagnosis as the histopathologic and colposcopy and qualified human resources should be sufficient to control this pathology. However, such knowledge is not having an expected effect, because it still represents a worldwide health problem.¹⁻³

Cancer of the cervix is the third most common cancer and the fourth leading cause of death worldwide, second only to breast cancer, lung and rectal colon. Occurring in the world around 529.512 diagnoses of cervical cancer which corresponds to an incidence rate of 15,4 cases per 100.000 inhabitants and about 274.967 deaths are estimated for cervical cancer, ie, 7,8 deaths per 100.000 inhabitants. However, the majority of diagnosed cases is related to poor countries (85%) and deaths (90%), which present problems to implement the detection of cervical cancer appropriately and effective.⁴⁻⁶ This situation of uneven involvement and greater of cervical cancer in developing countries stems from drug shortages and the lack of screening as a means of preventive and early diagnosis.⁶

Brazil itself being a developing country, performs the screening, develops programs to prevent cervical cancer which are promoted by the Ministry of Health and are in line with the World Health Organization (WHO), which aim to cover the population at risk for the development of cervical cancer, with the completion of cytological and cover about 80 % of women at risk age group (25-59 years old) for the development of cancer. The fulfillment of this goal would provide early detection, which would increase the chance of cure to 100% of cases that were detected at an early stage of development.²

What occurs in Brazil is cancer of the cervix as the second most frequent type among women, with 17,540 new cases in 2012 and incidence of 17,49 cases per 100.000 inhabitants. Thus highlighting the need for research to better target health care, control and prevention of it⁷, because the problem is not related to lack of screening as international research has demonstrated, but possibly as this screening is occurring, therefore, it is necessary to investigate and reflect on the prevention of cervical cancer in Brazil.

The direction of health care in the fight against cervical cancer requires scientific knowledge about the characteristics of the public who want to get involved, so as to identify potential problems that may be interfering with the efficiency and effectiveness of actions. Therefore, it is important to develop research *in loco*, in health services, which may reflect the reality of the population, which is responsible for and subsidize on better implementation and adequacy of Cancer Prevention Program of the Cervix.⁸

The determination of the age group for carrying out health promotion, prevention and early detection of this cancer is extremely important not to let women with potential risk, discovered by health actions. Admittedly, the age incidence of cervical cancer is at 35-59 years old; ⁶ however, if the goal is to prevent and detect early, this woman should be involved in the actions before age 35.

The Ministry of Health recommends as age group at risk for developing this cancer women between 25 and 59 years old, it is usually the time when sexual activity begins, where there is a higher incidence of high-grade lesions (30 and 39 years old), since younger women tend to have infections with human papillomavirus (HPV) and low-grade lesions that spontaneously regress.¹⁻² However, studies have shown the necessity of extending this age group, whereas if found a trend towards earlier start sexual⁹ activity and also higher incidence of HPV ⁹⁻¹⁰ in adolescents, besides the fact that the evolution of cervical cancer is slow and can take about 30 years and still younger women at 25 have a diagnosis of cervical uterine cancer.^{4,8}

A survey of adolescent females showed sexual activity beginning on average at 14,8 years old.¹¹ Another study¹² identified 13,9 % of women initiating sexual activity at age 14 or less; 37,2 % with 15 to 17; 18,5% 18 to 20; and only 10 % over 21 years old. He excelled in the study that 27,6% of sexually active adolescents reported Sexually Transmitted Infection (STI) prior, being mentioned vaginal *Candida* infections or *Trichomonas sp* in 20,7%, urethral infections in 4,6%, HPV 2,3% and infection by human herpes virus at 1.2%. It was observed that adolescents who have had STDs had no knowledge about cancer of the cervix, the Pap and HPV, which is the main risk factor for the development of cancer.¹¹

In the capital of Paraíba, João Pessoa, during the years 2000 to 2009, 3,31% of women who died due to cervical cancer, were younger than 30 years old, is striking, as this

neoplasm is slowly evolving and may assume that many of these women acquired the cellular changes still in adolescence.¹³ This information corroborates with a survey in Rio Branco/Acre, which brought the variable age as a factor that was associated with not achieving preventive. Women under 25 and above 59 years of age did not have equal availability of cytological, as the age group that was advocated.¹⁴

In a case-control study conducted in the UK, to evaluate the effectiveness of cervical screening in women, depending on age, did not find enough evidence to state that the screening test performed in women under 25, reduced the incidence of cancer cervix of 25-29 years old.¹⁵ However, it may be noted that the development of cancer after exposure to agents precancer takes several years and is not therefore possible to demonstrate the decrease in the incidence of this disease before 3rd decade, the expansion of the age range of risk will not prove immediately its impact on the prevention of cervical cancer, for viewing your effect will occur in the range of incidence of cancer, so important to their development and monitoring to see its effectiveness.

Such information about and proposes a reflection, because despite the age parameter set by the Ministry of Health is based on the concept that the women younger than 25 noted changes are not alarming and usually regress spontaneously, is it is an audience with immaturity of the genital tissues, which is one of the predisposing factors for HPV and hence for cervical cancer.¹² Another fact was found by a retrospective cohort study, developed in New Zealand with 1,063 records of women diagnosed with CIN3, which has HPV as the main predictor. These women had an incidence of 31,3% of cervical cancer, 30 years after the diagnosis of CIN3 versus 0,7% risk of cancer in women who started treatment at the time of diagnosis of CIN3 or HPV.¹⁶

Besides the immaturity of the tissue and the presence of HPV in women under 25, there are still vulnerable situations such as involvement of infections that provide cellular changes and vaginal pH, such as vulvovaginitis, bacterial vaginosis and STDs, which increase the chances of occurrence of HPV; being valid to reinforce that the presence of STDs increases fivefold the chance of occurrence of cervical cancer. Such conditions seem to go along with younger women, and thus tend to make them a crowd at risk.^{14,17}

To corroborate the information about the prevention and early detection of cervical

cancer, we set out to assess the prevention made in an Integrated Family Health Unit in the city of João Pessoa, from June 2009 to July 2010. This research is a strategy to determine if the actions recommended by the Ministry of Health are corroborating with the local reality, since national and international strategies to control diseases should be worked according to the reality of states, counties and localities and is therefore liable to alteration by the need of its target audience and reach of objectives.^{2,8} Issues that this is highlighted in research conducted in Ceará Mirim /Rio Grande do Norte that exposes the need for professionals and managers are aware of the population access to service, and determine whether the involvement of younger than 25 is necessary or not in accordance with local realities is an important point.¹⁸

Rate isolation Integrated Health Unit responsible for a particular neighborhood, in a socioeconomically disadvantaged area, it is useful to check if the control action of cervical cancer is being adequate to the need of the population. So there was coverage of Pap cervical cancer, according to age range recommended by the Ministry of Health evaluated the need to expand the age range recommended for prevention by identifying the occurrence of diseases gynecological that provide an adequate development of cancer in the age group at risk and in women under age 25 means.

This study examined the need to expand the age range for the prevention of cervical cancer in an innovative way, since other studies in analyzing the need for expansion, for the involvement of HPV, the onset of sexual activity, but not identified both groups (under 25 years and 25-59 years) are also vulnerable to the development of cervical cancer.

OBJECTIVE

- Checking the coverage of preventive screening for cancer of the cervix and the need to expand the age range recommended for prevention.

METHÓD

This is a cross-sectional, exploratory and documentary study with a quantitative approach. The test was performed in an Integrated Family Health Unit in a health district of the city of João Pessoa / Paraíba.

We worked with secondary data, being the information collected from the log book of results of cytologic examination, the health unit said, from June 2009 to July 2010.

Initially, the sample consisted of 1427 records of preventive screenings, however, were excluded, 34 records for having increased age (> 59 years old) that the purpose of the study and six by the absence of registration of the patient's age, total 1387 records analyzed.

Data collection was performed in December 2010, information regarding age being withdrawn; presence of *Candida sp.*, *Gardnerella vaginalis*, *Trichomonas vaginalis* and HPV. Initially, the data were digitized and categorized into Excel spreadsheet version 2007 and later was transferred to the R statistical software version 2.15.1.

The categorization of data was performed on all study variables. In the age variable, received 1 to women younger than 25, and 2 inserted in the range of 25 to 59 years old; in the variable presence of the microorganism, the number 0 was assigned to women who had no disease and 1 to those where the presence of fungal, bacterial, protozoan and / or viral, being evaluated for each condition individually agent was verified.

In order to assess the association between categorical variables, there was used a method of making statistical decision based on hypothesis testing, which is capable of rejecting or not a particular assumption about a problem related to certain population.¹⁹ To ascertain whether the age group younger than 25 years old and between 25 and 59 have equal or different proportions as gynecological disorders, the chi-square test, and considered significant when $p < 0,05$.

At all stages of the study the ethical aspects of research involving human subjects were observed, according to Resolution N. 196/96 and the study submitted to and approved by the Ethics Committee in Research of the Federal University of Paraíba (process: 735/10).

RESULTS

The coverage area of Integrated Health Unit has a female population of 3876 women, aged 25-59 years old, who must be assisted for the actions of health because it is an age of risk for developing cancer cervix.

By analyzing the log book of cytological examinations in the period from June 2009 to July 2010, we found that preventive examinations in 1427, of which 1031 were performed on women aged 25-59 years old was conducted; 356 in under 25; 34 patients older than 59 and six cytological examinations showed no record of the age. The cytological women that did not contain age were excluded, as well as the records of over 59 years old, due to the small number of observations, resulting in a sample of 1387 records.

During the study period the coverage of Pap smear was 26.59% left to be desired, since it is recommended to cover 80% of the population at risk for the development of cervical cancer. Regarding the age groups analyzed, 74,33% of the sample corresponded to age group 25-59 years, while 25,67% to younger than 25 years old age group.

A characteristic was evaluated the presence/absence of microbiological agents identified by cytological, and established the presence of seven different microorganisms. Of these, *Lactobacillus*, *cocci* and *bacilli* were the most prevalent, though no epidemiological significance regarding the prevention of cervical cancer.

For micro-organisms with repercussions for the development of cervical cancer vulvovaginitis, bacterial vaginosis and STDs were identified, *Candida sp* the most prevalent, followed by *Gardnerella vaginalis*, as can be seen in Table 1.

Table 1. Distribution of the result of cytological examination in women until 59 years old, according to microbiology identified (N = 1387), João Pessoa-Paraíba.

Microbiological Results	N	%
Lactobacilli	468	33,74
Coccus	397	28,62
Bacilli	304	21,91
Candida sp	260	18,74
Gardinerella vaginalis	72	5,21
Trichomonas vaginalis	31	2,23
HPV	4	0,23

It is important to note that women usually presented in a microbial association microbiological results, then a *Lactobacillus sp* case, for example, may be associated with any identified microbiological case or more of them.

With the purpose of verifying the need to increase the age range recommended for the prevention of cervical cancer, we evaluated the association between age and presence/absence of microorganisms with epidemiological significance for the development of cervical cancer. By chi-square

test was evaluated the presence/absence of *Candida sp*, *Gardinerella vaginalis*, *Trichomonas vaginalis* and HPV were the same or different in the age group of 25 and 25-59 years old.

With the test for the presence / absence of *Candida sp*, it was found that the age group under 25 years was the most affected, with statistically significant difference ($p < 0,05$), indicating that women younger than 25 years old are most affected by *Candida sp* in the age group at risk.

Table 2. Percentage of diagnostic examination of Pap smears in women by age group (N = 1387), João Pessoa-PB.

Diagnosis	Under 25 years old (%)	Between 25 and 59 years old (%)	X ²	P-value
<i>Candida sp</i>	23,03	17,26	5.4094	0,02*
<i>Gardinerella vaginalis</i>	5,8	4,9	0.3132	0,57
<i>Trichomonas vaginalis</i>	1,4	2,5	1.0438	0,3
HPV	0,5	0,1	0.2944	0,58

Chi-square test: * $P < 0.05$.

It is important reinforcing that do not identify a significant p-value for the difference in the proportions between age groups (below 25 and 25-59 years old), related to the presence of *Gardinerella vaginalis*, *Trichomonas vaginalis* and HPV indicates that the involvement of these age groups is similar. It is understood then that the age group below 25 years old has the same level of risk for developing cervical cancer than the age range recommended for prevention.

DISCUSSION

The coverage of Pap smear during the study period was lower than that recommended, what interferes significantly in assisting the combat cervical cancer, because though, most examinations are recommended at age, the coverage obtained by unit is less than expected, but still identified coverage was higher than reported in surveys in Ceará and Igatu, respectively where there was a coverage of 11,22% and 14,9% of the population 25-59 years. The 80% coverage of the target population is not easy, but requires that, regardless of the problems identified, preventive actions may occur, searching this quantitative target, associated with quality stock.²⁰⁻¹

One feature that is commonly provided in the completion of cytological unit in question is the presence of previous diagnosis of vulvovaginitis and / or bacterial vaginosis or verification of their clinical signs that result gives the quest for realization of cytology. Soon the women have sought the prevention of cervical cancer, not in order to prevent it but to treat gynecological disorders and parallel end up performing preventative.

As for *Gardinerella vaginalis* was also found that the women under 25 were the most affected, however this difference was not significant ($p > 0,05$). Have *Trichomonas vaginalis* was more prevalent in the age range recommended for prevention, however, without statistical significance ($p > 0,05$), and HPV, in turn, showed the highest amount in less than 25 years age group, but without statistical significance ($p > 0,05$) as shown in Table 2.

Similar findings were identified in another research²² that found in the narratives of the women interviewed, the woman seeks medical assistance to identify problems themselves and believes that cancer of the cervix as something fearful and threatening, which can be victimized. In another study²³, the same finding was obtained in their study in southern Brazil, where women interviewed sought medical care and preventive care, in an attempt to cure gynecological problems, but once solved your problem, they do not return to the result of cytological, perhaps because they understand the importance of preventive screening of cervical cancer, as an important identifier premalignant lesion that needs to be resolved.

It is important to mention that the cytological examination aims to prevent cancer of the cervix and not identify gynecological disorders, however the perception of women regarding the presence of vulvovaginitis and bacterial vaginosis and their need for treatment cannot make this totally wrong, because by more than the examination is not conducted this way, it identifies certain conditions, which provide an environment conducive to cancer development environment, then identify them and treat them as a part of prevention and is an important issue.

The microbiological results of cytology were also analyzed by other researchers ²¹ in Igarapava, which showed *Gardinerella vaginalis* with an incidence of 34,7 % of the cases analyzed, followed by *Candida sp*. with 12,7%, and 10,2% mixed. Already a survey conducted by Vasconcelos et al.²⁴ in Fortaleza, brings cervicovaginal colonization, diagnosed in the reports, occurring mainly by

cocci and *bacilli* 42,6 %, followed by 25,3 % *Gardinerella vaginalis* , *Lactobacillus sp.* 17,7%, *Candida sp.* 10,2% and 3,1% *Trichomonas vaginalis*. Previous research on de Vasconcelos, also held in Fortaleza, showed *Lactobacillus sp.* present in most microbiological reports (38,2%), followed by *Gardinerella vaginalis* (28,3%), *cocci* and *bacilli* (24,8%), *Candida sp.* (7,7%) and 0,5% *Trichomonas vaginalis*.²⁵

It was observed that microbial involvement in cytological examinations, are varying between studies, and it was verified in this study. In no time, do not have similar data, because each population is unique and presents its specificity, which will have a direct impact on performance, however it is worth noting that even with differences, microorganisms *Candida sp.*, *Gardinerella vaginalis* and *Trichomonas vaginalis* are always present and with high levels of involvement.

Regarding HPV is a major risk factor for the development of cancer, a study in Maceio showed high rate of adolescents infected with HIV (27%) and high percentage of high-risk oncogenic HPV (28,5%) and even among infected adolescents, STDs showed significative.¹⁰ Association, thus, is important to reflect only women aged 25 to 59 are favorable to the development of such gynecological disorders, which, with the realization a quick and inexpensive test that is cytological, can be identified and dealt with previously and thus predisposing to make prevention of cervical cancer factors.

This reflection has been observed in other studies which have underscore the need to expand the age range recommended for the prevention of cervical cancer, because the young people have started their sexual life earlier, it occurs contraceptive use oral that in most cases, does not follow the recommendation by the health professional, and in addition, contraceptives, such as condoms, are not to be used by young what facilitates the acquisition of STIs. Therefore, this group ends up exposed to a range of factors that may trigger cancer.^{2,26}

In the present study, *Candida sp.* fastened significantly women under 25 over the age of risk, which features greater involvement of the lower age group. One issue that must be clear is that while part of the normal flora of the vaginal mucosa, when present in the microbiological results deserve attention and care, because occasion a conducive environment for the growth of bacteria vaginosis, and accordingly provides the installation of other infections, among them,

the possible development of HPV and cervical cancer, and even false positive or negative results on cytology, which significantly interferes with prevention.

It is clear that *Candida sp.* is not a predisposing factor for the development of cervical cancer factor, however it is located at the beginning of the chain of events that may lead to the occurrence of malignant cell changes, so important to the diagnosis and appropriate treatment and previous form, giving appropriate to its importance in cytological finding, since that time its concentration goes from normal to pathological. It was evident even an involvement treated between under 25 and women aged 25 to 59 for the presence of *Gardinerella vaginalis*, *Trichomonas vaginalis* and HPV. Indicating that women in the age range recommended for the prevention of cervical cancer as younger are similarly infected by these gynecological disorders.

Gardinerella vaginalis is a species of bacteria responsible for the installation of bacteria vaginosis which arises from the imbalance of the vaginal flora, in particular anaerobic. Thus, at low concentrations microbiota does not cause damage. However, there are factors that may provide the inflammatory process, altering the biological balance, causing predominance of the bacteria and thus the bacterial vaginosis such as candidiasis.^{2,20}

Changes in vaginal microbiota, which enables a favorable medium for the installation of bacteria vaginosis, occur most frequently among women with cervical cytological abnormalities. Another important factor is the significant association between HPV and environment conducive to vaginosis, which could play an important role in the development of cervical intraepithelial neoplasm (CIN). This was found during a study in which *Gardnerella vaginalis* was present in 66.7% of reports with CIN I / HPV.²⁷

Regarding *Trichomonas vaginalis*, it is a protozoan that performs the parasitism of the uterine cervix, vagina and urethra; is the causative agent of trichomoniasis, and STD that has a risk of sexual transmission of 60% to 80%. As a result, their identification, in cytology requires attention and how to conduct the treatment of women and also your partner sexual.²

When present in a result of cytological requires the completion of a new screening test after the treatment, because vaginal trichomoniasis can lead to a false negative result. Moreover, it is an STD and thus

increases by five times the chance of developing cancer of the cervix.^{2,28}

HPV in turn, is associated with the presence of cellular changes in 90% of cases; it appears, most often asymptomatic or subclinical like lesions. As a result, needs attention while crawling through the examination Papanicolau.²

As has been the three infectious agents that affect similarly those under age 25 and women between 25 and 59 years old, are predisposing factors in the development of cervical cancer, so the development of preventive actions that only involve a range match age 25 to 59 is weak, whereas a high proportion of vulnerable women are devoid of care, which denotes a gap in prevention of cancer iRAM negatively impact the control of this disease in both incidence and mortality, both still unchecked.

CONCLUSION

The coverage of Pap smear in the Integrated Family Health Unit analyzed is lower than those recommended by the Ministry of Health, but was higher than observed in other Brazilian cities. There have been indications that the age range recommended for the prevention of cervical cancer should be expanded so as to go to involve women under 25, according to public that this research has involvement of predisposing risk factors and so similar to the target age range.

Soon the women under 25 are as vulnerable as those aged 25 to 59 years old to the development of cervical cancer, which is extremely important that prevention efforts to reach and thus enables a real impact on the target population, with valid points out that the women in this study are in a geographic area economically and socially disadvantaged; characteristic that, according to a research conducted in Natal, should also be viewed by managers and professionals, in proposing the assistance.²⁹

This study also showed the need for standardization of the books in cytological as well as care in recording data to prevent relevant information may be lost and thus provide a more thorough assessment of the situation.

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