

# THE PREVALENCE OF INTRA-EPITHELIAL LESIONS IN PREVENTIVE TESTS COLLECTED BY STUDENT NURSES: 2008-2012

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**ABSTRACT:** This study aimed to identify the prevalence of the diagnosis of intra-epithelial lesions, the age profile of the patients, and the principal microbiological and cellular changes described in the records of preventive tests collected by nursing students. It is a retrospective, descriptive-analytical study undertaken through documentary research. The sample was made up of 2,401 records of reports of preventive tests undertaken in the period January 2008 – April 2012 in a municipality in the non-metropolitan area of the State of Paraná, Brazil. A specific semi-structured form was used for data collection. Cellular atypia was present in 4.34%, with 2.19% being for the intraepithelial lesion. In relation to age, 25.55% of the women were aged between 40 and 49 years old. The adequacy of the sample was satisfactory in 84.99% of the records. Endocervical inflammation was present in 63.05%. The predominant microbiological agent was *Lactobacillus sp.* (44.41%). The records evaluated showed a low prevalence of intra-epithelial lesions, in comparison with the literature.

**DESCRIPTORS:** Nursing; Papanicolaou test; Cervical cancers.

## PREVALÊNCIA DE LESÃO INTRA-EPITELIAL EM EXAMES PREVENTIVOS COLETADOS POR ACADÊMICOS DE ENFERMAGEM: 2008-2012

**RESUMO:** Objetivou-se identificar a prevalência do diagnóstico de lesão intra-epitelial, o perfil etário das pacientes e as principais alterações microbiológicas e celulares, descritas em registros de exames preventivos coletados por acadêmicos de Enfermagem. Trata-se de um estudo retrospectivo, descritivo-analítico realizado por meio da pesquisa documental. A amostragem foi composta por 2.401 registros de laudos de exames preventivos realizados entre o período de janeiro de 2008 a abril de 2012 em um município do interior do Paraná. Para a coleta de dados, utilizou-se formulário específico semi-estruturado. A atipia celular estava presente em 4,34%, sendo 2,19% para lesão intra-epitelial. Com relação à idade, 25,55% das mulheres tinha entre 40 e 49 anos. A adequabilidade da amostra foi satisfatória em 84,99% dos registros. A inflamação endocervical foi presente em (63,05%). O agente microbiológico predominante foi *Lactobacillus sp.* (44,41%). Os registros avaliados apresentaram prevalência de lesão intra-epitelial baixa, se comparada com a literatura pertinente.

**DESCRIPTORIOS:** Enfermagem; Exame papanicolau; Neoplasias do colo do útero.

## PREVALENCIA DE LESIÓN INTRAEPITELIAL EN EXÁMENES PREVENTIVOS HECHOS POR ACADÉMICOS DE ENFERMERÍA: 2008-2012

**RESUMEN:** El objetivo de este estudio fue identificar la prevalencia del diagnóstico de lesión intraepitelial, el perfil etario de los pacientes y las principales alteraciones microbiológicas y celulares, descritas en registros de exámenes preventivos hechos por académicos de Enfermería. Es un estudio retrospectivo, descriptivo analítico realizado por medio de la investigación documental. La muestra fue compuesta por 2.401 registros de laudos de exámenes preventivos realizados entre el periodo de enero de 2008 y abril de 2012 en un municipio del interior de Paraná. Para recoger los datos, fue utilizado el formulario específico semiestructurado. La característica celular estaba presente en 4,34%, siendo 2,19% para lesión intraepitelial. La edad, 25,55% de las mujeres estaba entre 40 y 49 años. La muestra tuvo cualidad satisfactoria en 84,99% de los registros. La inflamación endocervical estuvo presente en 63,05%. El agente microbiológico predominante fue el *Lactobacillus sp.* (44,41%). Los registros evaluados presentaron prevalencia de lesión intraepitelial baja, si comparada con la literatura pertinente.

**DESCRIPTORIOS:** Enfermería; Prueba de Papanicolaou; Neoplasias del cuello del útero.

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## INTRODUCTION

The high prevalence and the growing rate of morbidity and mortality resulting from cervical cancer (CC) cause this to be a worldwide public health problem. Thus, Brazil presents a panorama which is similar to that of developing and developed countries<sup>(1)</sup>.

Nevertheless, it is valid to emphasize that the intrinsic condition for the development of Intra-Epithelial Lesions (IEL) - a cytopathologic finding which is a precursor for cancer - is given by the local invasion of the oncogenic agent termed Human Papillomavirus (HPV)<sup>(2)</sup>. In this context, in order to undertake the diagnosis of HPV, there is the oncological cytological smear test, known as the cervico-vaginal smear, the Papanicolaou test, or, simply, the preventive test. This method of early tracking and diagnosis presents a high level of confidence<sup>(3)</sup>.

In relation to the nomenclature used in the reports, it is emphasized that since 2006 the Ministry of Health has stipulated new terms for squamous cervical lesions. To this end, the term Cervical Intraepithelial Neoplasia (CIN), - previously classified as grade I, II or III - has been abandoned in favor of the terms Low Squamous Intra-epithelial Lesion (LSIL) and High Squamous Intra-epithelial Lesion (HSIL)<sup>(4)</sup>. This change emerged from the need for an international standardization in regard to the cyto-pathologic nomenclature of cervical lesions.

Public health bodies recommend the regular undertaking of the cytopathologic test as the main means of prevention against cervical cancer<sup>(5)</sup>. However, analyzing the numbers from the Ministry of Health database referent to the number of cytopathic tests undertaken in Brazil, it is possible to ascertain a drop of more than 1.5 million, if one compares the numbers for January - June 2012 with the same period in the previous year<sup>(6)</sup>. This corroborates the idea that, despite awareness of the importance of the Papanicolaou test, many women fail to do it for various reasons, such as believing it to be unnecessary, feelings of shame and through difficulties related to work, with one reason mentioned being the delay in booking the test and receiving the results<sup>(7)</sup>.

It usually falls to the nurse to undertake the preventive test. For this reason, the nurse must have qualified technical-professional competence,

both for collecting and dispatching the sample and for the later interpretation of the reports. This is because it will be in the nursing consultation that the important guidance will be passed on and the appropriate referral made to specialized care services, when necessary<sup>(8)</sup>. Furthermore, it is also essential for this professional to establish a bond of trust with her clients, so as to overcome barriers which impede the undertaking of the test<sup>(9)</sup>.

In the light of this, knowledge of the characteristics of the nurse's clientele - mainly for the nurse working in public health - causes the nurse to be a professional who demonstrates competence and safety to the service users. This being the case, this article aims to present the prevalence of the intraepithelial cervical lesion in women who undertake the preventive test with undergraduate students of Nursing in their field practice and placements undertaken in a Nursing clinic in the non-metropolitan region of Paraná. In addition to this, the secondary objectives are to present the age profile of the patients at the time of the smear collection, and the main findings referent to cellular and microbiological changes.

## METHOD

This investigation began with the aim of investigating the frequency with which the diagnosis of intraepithelial cervical lesions was described in the preventive tests of women who undertook the collection of the material with Nursing students from a private university in the West of Paraná. This knowledge is necessary for establishing parameters for the diagnosis of cervical cancer in the local ambit, as well as to define strategies for women's health care.

It was in this context that a study of the retrospective type was undertaken, with a descriptive approach, through a documentary study. The sample was made up of records of reports of preventive tests undertaken in the period January 2008 - April 2012, collected by students of nursing, which presented information relating to the patient's date of birth, and to the laboratory diagnosis described clearly and completely, these being the inclusion criteria. In this way, 2,401 records of tests undertaken during the above-mentioned period were counted. Out of the total number, 122 records were excluded because they did not contain sufficient information

to meet the research's objectives, because they presented incomplete personal information, or because they had not been collected by the students. As a result, 2,279 records remained for analysis of the content and surveying data. Regarding the research environment, a clinic was selected belonging to the Department of Nursing of the above-mentioned university located in the central area of the city, with its physical structure alongside a Primary Healthcare Center (PHC). As well as the collection for preventive tests – included as part of the activities of the course in Women's Health Care (WHC) – the Nursing clinic is also used for undertaking curricular activities for the courses in Family Health (FH) and Care for the Child/Adolescent in the Health/Illness Process (CCAPSC, in Portuguese).

Among the works undertaken by the students in that environment, the following stand out: nursing consultations, planning for home visits (HV), child rearing and meetings with professors for the placements for the production of visit reports, plans and/or data collection instruments in the physical examination. All the Nursing actions undertaken in the clinic are directed at the general population, without any type of selection and/or distinction of their public.

For data collection, a specific semi-structured form was used, which allowed the surveying of information on identification data and test results (cytopathologic diagnosis, and cellular and microbiological changes). The collection of these data occurred during the month of October 2012 and, following this, they were inserted and organized in Microsoft Excel Starter®, version 2010. The variables of "age at the time of collection (in years)"; "cytological diagnosis" and "microbiological diagnosis", were thoroughly analyzed regarding frequency and statistical percentages.

The stages were only started after the researchers had requested formal authorization from the person responsible for the Nursing clinic, presenting the study's objectives and the scale of the importance of undertaking it for the institution, for the public health authorities and for the population as a whole.

The project for this study was referred to the Research Ethics Committee (REC) of the Pontifical Catholic University of Paraná, and was approved under the REC's Decision N. 120,008, issued on 10th October 2012. In addition to this, in

relation to the ethical principles established under Resolution 196/96 of the National Health Council, the confidentiality of the data collected, which could identify the service users who undertook the collection of the sample for the preventive test in the period evaluated was ensured.

## RESULTS

From the review of the 2,279 records it was observed that 13 lacked information relating to the age of the patient at the time of the collection. As a result, for this data, the study used a total sample of 2,266 records. In this same regard, it was observed that 99 (4.37%) were aged below 20 years old; 473 (20.87%) were aged between 20 and 29 years old; 507 (22.37%) were aged between 30 and 39 years old; 579 (25.55%) were aged between 40 and 49 years old; 386 (17.03%) were aged between 50 and 59 years old; 172 (7.59%) were aged between 60 and 69 years old, and 50 (2.21%) patients were aged 70 years old or over. The lowest age observed in a sample was 13 years old, while the oldest patients, at the time of the Nursing consultations for the collection of the sample for the preventive test, in the period researched, were two who were aged 81 years old.

In relation to the adequacy of the material, that is, the minimum standard for conformity necessary for ensuring viability of the cytopathologic analysis of the sample collected, the reports indicated that 1,937 (84.99%) were satisfactory, and 342 (15.01%) were dissatisfactory; of these, 216 (9.48%) were dissatisfactory due to cytolysis, 122 (5.35%) due to the presence of erythrocytes, one (0.04%) due to the presence of pyocytes and three (0.13%) because they contained hypocellular material.

In relation to the descriptive diagnosis for benign cellular changes, the results were: 579 (25.41%) were within normal limits in the material examined; 1,437 (63.05%) records had a diagnosis of inflammation; 253 (11.10%) had records of atrophy with inflammation; and 10 (0.44%) records had a description of immature squamous metaplasia.

Table 1 describes the results relating to the diagnosis of cellular atypia and the graph 1 presents the surveying of the microbiological findings.

Based on the analysis of all the records, it was ascertained that only 188 (8.25%) did not contain a diagnosis of microbiological changes.

Table 1 – Descriptive diagnosis of cellular atypia. Toledo-PR-Brazil, 2012

Descriptive diagnosis	n (2279)	%
HSIL	22	0.97
LSIL	28	1.23
ASCUS*	49	2.15
Without changes	2180	95.65

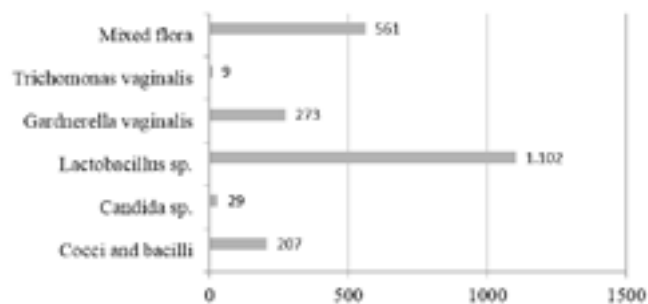
\*Atypical squamous cells of undetermined significance

## DISCUSSION

Among the risk factors which contribute to the increase in the number of cases of women diagnosed with IEL, one can mention the early initiation of sexual activities, multiplicity of partners, promiscuity and a large number of children<sup>(10)</sup>. It is known that these factors, as well as the onco-pathology itself, are preventable and controllable<sup>(11)</sup>. As a result, the Brazilian Federation of Gynecology and Obstetrics, with the Brazilian Cancer Society, presented the final version of a text which provides a consensus recommendation from specialists for the tracking, diagnosis, and clinical management of the treatment of cervical carcinoma, and the initial approach for prevention<sup>(12)</sup>. Despite all this effort directed towards early diagnosis, however, many women in Brazil and worldwide – mainly in poorer regions – suffer due to the inaccessibility of the test<sup>(13-14)</sup>.

One study undertaken in the city of Guarapuava, Paraná, whose research subjects were 885 women, indicated that the participants' mean age was 41 years old<sup>(15)</sup>. In the present survey, the prevalence was of women aged between 40 and 49 years old. Equally, in the cross-sectional survey undertaken by the Federal University of Ceará, women aged between 25 and 59 years old predominated<sup>(11)</sup>.

In a separate epidemiological study undertaken in the cities of São Paulo and Campinas in the State of São Paulo(SP), age had a direct relationship with the prevalence of the intraepithelial lesion. The authors of that study stated that women aged below 25 years old had a prevalence of IEL which was greater than those aged between 25 and 34 years old. For those aged between 45 and 54 years old, on the other hand, the prevalence was even lower than for both the above-mentioned age ranges; however, women aged between 55 and 65 years old had the second highest



Graph 1 - Distribution of the microbiological findings. Toledo-PR-Brazil, 2012

prevalence of IEL in the study<sup>(16)</sup>.

In research undertaken in the city of Fortaleza in the State of Ceará (CE), it was observed that 72.2% of the cytopathology reports evaluated described the adequacy of the material as satisfactory<sup>(17)</sup>. In this retrospective study, this same description was observed in 84.9% of the records. However, in the capital of Ceará, no sample was identified as dissatisfactory, while in the records evaluated here, this description was ascertained in 342 (15.01%) cases.

It is noteworthy that the considerable number of samples described as dissatisfactory in this study is partially explained by the fact that the currently recommended classification was adopted here, according to which any sample which is difficult to fully read for various reasons is described as dissatisfactory, rather than just those which are impossible to read because they contain acellular or hypocellular material<sup>(4)</sup>. One should consider, however, that the quality and adequacy of the material is directly related to how it is collected. In this regard, it is understood that it is of extreme importance for the future nursing professionals to acquire the necessary technical skills for effective collection while still undergraduates, thus avoiding as much as possible that impairment of the full reading of the sample should occur due to technical failures<sup>(8)</sup>.

Knowing this, one study undertaken in the city of Sorocaba (SP), aimed to evaluate the quality of the smears taken by Nursing students, in comparison with those taken by nursing professionals. The authors stated that the tests collected by the students had a lower prevalence of dissatisfactory samples in comparison with those collected by the nursing professionals. For tests collected in women aged 40 years old or over, only 5.6% of the samples collected by the students were dissatisfactory, while the

percentage of dissatisfactory samples taken by the professionals was 37.5%. The authors of the above-mentioned study alert to the importance of acquiring knowledge and skills for the collection of the Papanicolaou test so as to ensure the reliability of the result<sup>(18)</sup>.

Regarding the prevalence of cellular atypia, this study's results indicated a low rate of IEL. As presented in Table 1, the analysis of the 2,279 records resulted in the observation that only 99 had cellular changes, there being 50 with intraepithelial lesions.. In a similar study, the authors stated that only five (3%) reports had a diagnosis of cellular atypia, with two for ASCUS, two for HPV/CIN I and only one for HPV/CIN II<sup>(17)</sup>. Another retrospective analytical design allowed the authors to note that of the 26,203 tests analyzed, only a number close to 1,060 presented some type of cytologic change, while 236 (0.9%) were suggestive of micro-invasive HSIL<sup>(19)</sup>.

In relation to the microbiological findings, the study undertaken in the State of Roraima (RR) presented the etiological agent *Gardnerella vaginalis* as the principal cause of vaginosis in the sample population, totalling 33% of the infections<sup>(20)</sup>. In contrast with this, there were authors who observed the supremacy of *Candida* sp. in their studies, this being present in 59.75% of the samples evaluated<sup>(21)</sup>. Differently from all of these studies, the records of the preventive tests collected by the Nursing students during the period researched indicated a prevalence of the microbiological agent *Lactobacillus* sp., corresponding to 44.41% of the total number of records.

The presence of vulvovaginitis implies alteration of the normal microbiota and of the local power of hydrogen (pH). Because of this, it is believed that women with vaginal infections are more vulnerable when exposed to HPV. As a result, the identification of the etiological agent and the appropriate treatment are also tools for the prevention of cervical cancer. Among the main complaints presented by women during the Nursing consultations which proceed the collection of material, those which are suggestive of vaginal infection were leucorrhea, pruritus and pelvic pain<sup>(17)</sup>.

## CONCLUSION

It is considered that this study's objectives were achieved, given that the prevalence of

intraepithelial lesions was identified in the records evaluated, being low. The age range of the population which undertook the test in the period 2008 – 2012 was shown to be similar to that in similar populational studies.

Based in the currently-stipulated classification, the preventive tests collected by the Nursing students in the period evaluated presented a considerable number of dissatisfactory samples, which suggests failures in the undertaking of the appropriate technique for the collection and – in this same regard – the need for the planning and practical implementation of pedagogical strategies which result in the improvement of the knowledge and practical skill of student nurses, which are essential for qualified professional training. The majority of the records contained a diagnosis of endocervical inflammation. In relation to the evaluation of the microbiological flora, on the other hand, it is concluded that *Lactobacillus* sp. emerged as predominant among the etiological agents of vulvovaginitis.

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