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Risk determinants associated with the non-performance of periodic preventive exams for cervical cancer in the Northern Region, municipality of Porto de Moz, Pará - Brazil: a descriptive study

Determinantes de risco associados à não realização de exames preventivos periódicos do câncer do colo do útero na Região Norte, município de Porto de Moz, Pará - Brasil: um estudo descritivo

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Abstract

Quantitative descriptive cross-sectional study using a pre-coded questionnaire containing socioeconomic information of patients assisted at a Basic Health Unit in the municipality of Porto de Moz, located in the interior of the state of Pará, Brazil. The data was collected from October 10 to 28, 2022, with the participation of 263 women

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aged 18 to 64 years who sought care at the research site. The objective of this study was to identify factors related to non-adherence to the Papanicolaou test. Approximately 19.5% of the women did not undergo the exam due to being single, having at least one child, and being between the ages of 18 and 23. Among those who had incomplete elementary education, 29.4% did not take the test, and the majority earned less than one minimum wage. Furthermore, it was found that women in stable relationships did not feel the need to use condoms, which has negative implications for the public health network.

Palavras-chave: Cervical Cancer. Papanicolau. HPV. Public Health.

Resumo

Estudo descritivo quantitativo transversal utilizando um questionário pré-codificado contendo informações socioeconômicas de pacientes atendidas em uma Unidade Básica de Saúde no município de Porto de Moz, localizado no interior do estado do Pará, Brasil. Os dados foram coletados de 10 a 28 de outubro de 2022, com a participação de 263 mulheres com idades entre 18 e 64 anos que buscaram atendimento na unidade de pesquisa. O objetivo deste estudo foi identificar os fatores relacionados à falta de adesão ao exame de Papanicolau. Aproximadamente 19,5% das mulheres não realizaram o exame devido a serem solteiras, terem pelo menos um filho e estarem entre as idades de 18 e 23 anos. Entre aquelas que tinham educação fundamental incompleta, 29,4% não fizeram o exame, e a maioria ganhava menos de um salário mínimo. Além disso, foi constatado que as mulheres em relacionamentos estáveis não sentiam a necessidade de usar preservativos, o que tem implicações negativas para a rede de saúde pública.

Palavras-chave: Câncer Cervical. Papanicolau. HPV. Saúde Pública.

1. Introduction

Cervical cancer (CC) is the fourth leading cause of death among women worldwide, resulting in the deaths of over 311,000 individuals, with approximately 570,000 new cases each year according International Agency for Research on Cancer (National Cancer Institute - NCI, 2020). CC poses a significant public health challenge in developing or underdeveloped countries due to deficiencies within their public health systems, such as Brazil's Unified Health System (UHS) (SILVA et al., 2019).

In Brazil, the high incidence, prevalence, and mortality rates of CC indicate a public health issue, which is influenced by the country's vast geographical expanse, diverse religious and cultural beliefs, and numerous cultures. These factors present barriers to effectively controlling the mortality and incidence of this disease, highlighting the need to understand regional prevalence patterns across the country (BYINGTON, 2016; SOLDATELLI et al., 2016).

CC is primarily caused by Human Papillomavirus (HPV), a sexually transmitted infection (STI) with over 200 types, with HPV-16 and HPV-18 responsible for 70% of CC cases. It is estimated that sexually active individuals are susceptible to early infection. While 90% of cases resolve spontaneously, persistent infection with these two types can progress and lead to CCU (Pan American Health Organization - PAHO, 2022).

CC ranks as the third most common cancer among Brazilian women, with an estimated 17,010 new cases projected for the year 2023. The approximate risk is 13.25



cases per 100,000 women. According to the NCI, there is an expected increase in CC cases in comparison to the previous year (NCI, 2021a; NCI, 2022).

Regionally, CC has the highest incidence in the North region (26.24/100,000 women), followed by the Northeast region (16.10/100,000 women). In the Midwest, it ranks third (12.35/100,000 women), while in the South region it is the fourth most incident cancer (12.60/100,000 women). In the Southeast region, it occupies the fifth position (8.61/100,000 women) (NCI, 2021b). As a preventive measure against HPV infections, the UHS) offers vaccines to girls aged 9 to 14 and boys aged 11 to 14, as the effectiveness of the vaccine is proven prior to the onset of sexual activity (NCI, 2022).

For CC screening, the Papanicolaou Test (PT) is recommended. The test involves collecting cells from the cervix to detect possible changes, including precancerous lesions, signs of cancer, inflammation, and infections. It is advised that women between 25 and 64 years of age undergo the test annually, as this age group is most likely to have positive cases (NCI, 2016).

The World Health Organization (WHO) recommends a screening coverage of 80% among women aged 30 to 49. However, the Brazilian Ministry of Health (MH) expanded the target audience to women aged 25 to 64. The strategic action plan for Confronting Chronic Noncommunicable Diseases (CCNDs) from 2011-2022 aims for an 85% screening coverage. Nevertheless, the 2019 National Health Survey (NHS) revealed that only 81.3% of Brazilian women had undergone the exam, falling short of the action plan's goal (BRASIL, 2022a).

According to the NHS (2019), the state of Pará had a screening coverage of 76.5%, below the established target of the CCND action plan. In the municipality of Porto de Moz, located in western Pará, only 4.7% of the female population underwent the Papanicolaou Test (PT), as reported by the Cancer Information System (SISCAN) in 2021. This figure is significantly below the 85% goal set by the CCND 2011-2022 for the municipality (BRASIL, 2022a; GURGEL et al., 2019; INCA, 2020).

Therefore, it is crucial to investigate the reasons behind the low uptake of the PT, as mortality rates remain high and early detection plays a vital role in improving prognosis. Identifying these reasons is essential for developing strategies to reach women who do not adhere to the screening at the Basic Health Unit (BHU) in Porto de Moz and to encourage them to seek CCU screening and prevention. Given the concerning data regarding low PT uptake among women in this municipality, this study aims, among other objectives, to contribute towards changing this situation and investigating the factors contributing to non-adherence and lack of knowledge about the PT at BHU Rosa Cardoso, located on Lauro Sodré Street in the municipality of Porto de Moz.

2. Methods

A cross-sectional descriptive research method was employed, using a quantitative approach, to explore the reasons why these women do not undergo the PST and their general perception of its importance. A modified questionnaire from a previous study was utilized, which included pre-coded questions regarding socioeconomic information, gynecological and obstetric details, and knowledge about the exam (SILVA, 2018).

The research included women who sought care at the BHU, aged between 18 and 64, sexually active, and who willingly agreed to participate after signing the Informed Consent Form (ICF). Simple random sampling was employed, taking into



account the estimated number of the female population provided by the Brazilian Institute of Geography and Statistics (IBGE).

Inclusion criteria encompassed women who received care at the designated BHU, while exclusion criteria encompassed those who were not assisted at the BHU where data collection took place, as well as individuals with mental health issues, those who did not understand the questionnaire questions, those who had not initiated sexual activity, lacked interest in the subject matter, or declined to sign the ICF. Thus, the research included 261 women.

Approaching the women while they waited for care at the BHU, the purpose of the research was explained, and an invitation to participate was extended, emphasizing that they could decline participation at any time. If they agreed, they were asked to sign the ICF and were then taken to a nurse's room for increased confidentiality and privacy, where the researcher conducted the interview and facilitated completion of the questionnaire.

Participants were assigned identification numbers to safeguard the confidentiality of obtained information. At the end of the interview, participants were given the opportunity to ask questions, and if they had not undergone the test, they were invited to do so. The answers were subsequently organized in a Microsoft Excel (2013) table, with each variable assigned to a column and each participant assigned to a row. The program's built-in tools were utilized for statistical calculations.

The research commenced after obtaining authorization from the Health Secretariat of Porto de Moz and receiving approval from the Research Ethics Committee (REC) of the University Center FIBRA, under opinion number "5.676.255," in accordance with Resolution "n. 466 of December 2012" (Appendix 1).

3. Results and Discussion

The literature consensus indicates that there is no impact on mortality if the exam is performed before the age of 25. Therefore, for young women and adolescents, the most effective strategy is health education, which focuses on providing information about risk factors, prevention methods, HPV vaccination, and what steps to take in case of any symptoms (CURRY et al., 2018).

A total of 263 women participated in the questionnaire, and based on the inclusion and exclusion criteria, 2 questionnaires were excluded. Thus, the final sample consisted of 261 women, the majority of whom were married (n=85; 32.6%) or in a stable relationship (n=87; 33.3%), with an average age of 33.2 years. Most of the participants had incomplete elementary school education (n=75; 28.7%), while others had completed high school (n=60; 23%). The majority of the participants earned less than one minimum wage (n=182; 69.7%), and the largest occupation group was housewives (n=74; 28.4%), followed by farmers (n=56; 21.5%) (Table 1).



Table 1 - Socioeconomic Situation

Variables	Nº	%
Civil Status		
Married	85	32,6
Stable Union	87	33,3
Single	83	31,8
Divorced	3	1,14
Widow	3	1,14
Education		
Complete elementary education	40	1,5
Incomplete elementary school	75	28,7
High school complete	60	22,9
Incomplete high school	35	13,4
Higher education complete	28	10,7
Incomplete higher education	12	4,6
Non-literate	13	4,9
Income		
Less than 1 salary	182	69,7
1 to 2 salaries	67	25,7
Above 2	13	4,9
TOTAL	261	100

Regarding marital status, some authors have reported that it influences adherence to and utilization of the PST. Compared to single women or widows, women in stable marital relationships are more likely to seek family planning and obstetric care at health centers, increasing their chances of undergoing the PST (MASCARENHAS, 2020; MOREIRA and CARVALHO, 2020).

Another factor within this context is low education. Interestingly, this study found that only 4.9% of the interviewed women were illiterate, and 69.7% had an income below the minimum wage. This finding contradicts the literature, which suggests that women with lower education levels (i.e., less than seven years of schooling) and lower income are less likely to adhere to the PST. Therefore, educational campaigns targeted at this specific population may be necessary to address this discrepancy (CAMPOS et al., 2018; ROZARIO et al., 2019; MELO et al., 2019). Additionally, 90.4% of these women already have children, with 41.4% having 1-2 children (Table 2). Among them, 40.9% had normal childbirth, while 37.2% opted for sterilization as a contraceptive method.

These data may be associated with non-adherence to the PST and lack of knowledge about it. The responsibility of caring for children may prevent these women from seeking preventive measures for CCU (MELO et al., 2019). Despite condoms being the most effective method for preventing HPV infection, the majority of women reported not using them (MACHADO, 2017).



Table 2 - Gynecological and obstetrical aspects

Variables	Nº	%
Children		
Yes	236	90,4
No	25	9,6
How many children		
1 - 2	108	41,4
3 - 4	90	34,5
+ 5	50	19,2
Type of birth		
Normal	107	40,9
Cesaria	68	26,1
Normal and cesarea	61	23,4
Anticonceptive		
Oral	39	14,9
Injectable	19	7,3
Tubal ligation	97	37,2
Condom	57	21,8
No	49	18,8
TOTAL	261	100

Almost all the participants (98.8%) are not smokers (Table 3), although studies indicate that smoking can influence the development of CC, due to the low immunity caused by this type of behavior (YANG et al., 2021).

Table 3 - Risk factors for the development of CCU

Variables	Nº	%
Smoker		
Yes	5	1,9
No	256	98,8
Alcoholic beverage		
Never	188	72%
Always	70	26,8
Occasionally	5	1,9
Chronic disease		
Diabetes	9	3,4
Cancer	4	1,5
Sexually Transmitted Infection	0	0
No	198	95
TOTAL	261	100

It was observed that 210 (80.5%) participants had undergone the PST at least once, with the majority having done it within the past year (n= 86, 33%). Among those who underwent the test, 85.45% showed no changes in the result (Table 4). The main reason for performing the test was for CC prevention, with 62.1% (n= 162) indicating this as their motivation. A significant portion of participants (64.4%, n= 168) were aware that the test should be performed annually, and 59% (n= 154) underwent the test through the public health network.

The Ministry of Health recommends CC screening for women between the ages of 25 and 64 who are sexually active. This age range allows for the identification of any abnormalities and enables early treatment initiation. It is noteworthy that 80.5% (n= 210) of the interviewees had undergone the PST, a figure close to the target set by the action plan and strategies for Non-Transmissible Chronic Diseases (NtCD), which aimed to achieve a screening rate of 85% among women in the municipality (BRAZIL, 2021).



Therefore, it can be observed that these women demonstrate good adherence to PST. Similar findings were reported in two other studies conducted in the cities of Redenção, Pará, Brazil, and Açailândia, Maranhão, Brazil, which also found an 80% screening rate (SILVA et al., 2021; NASCIMENTO et al., 2022).

Table 4 - Performance of the exam, periodicity, reason for not performing it, last exam performed, and place where the exam was performed.

Variables	Nº	%
Have you ever taken the exam		
Yes	210	80,5
No	51	19,5
Last time you took the exam		
< 1 year	86	33
= 1 ano	73	28
> 2 years	51	19,5
Did you have any change in the result		
Yes	31	14,6
No	181	85,4
Why did you take the exam		
By prevention	162	62,1
For presenting symptom	37	14,2
By risk behavior	12	4,6
Frequency you take the exam		
Every year	168	64,4
2 in 2 years	22	8,4
> 3 anos	21	8
Where you took the exam		
UHS	154	59
Private Network	57	21,8
TOTAL	261	100

Among the participants who did not undergo the PST, 19.5% (n=51) had an average age of 23.5 years (Table 4). They were predominantly single, used condoms as a contraceptive method, and had an average of two children. The majority of these participants could not identify a specific reason for not having the exam, with 47.1% (n=24) selecting "others," followed by 35.3% (n=18) citing a lack of information. Among the women who had never undergone the exam, 19.5% (n=51) were primarily between the ages of 18 and 23, accounting for 53% (n=27) (Table 5). While this age group is not the primary target audience for screening, they should still consider having the exam if they possess risk factors (BRAZIL, 2021).

The lack of information from healthcare professionals can contribute to low exam rates and limited demand for screening. Many women are unaware of when to start screening, how the exam is performed, and the importance of its implementation. Therefore, the involvement of healthcare professionals in promoting the PST is crucial, as they are responsible for disseminating information about HPV prevention and emphasizing the significance of starting CC screening (COSTA et al., 2017; LIMA et al., 2019).

Nevertheless, women express fear and shame when it comes to undergoing the exam. Many are apprehensive about the possibility of a positive result and feel embarrassed during the examination, particularly when the healthcare professional is male (AGUILAR and SOARES, 2015; OLIVEIRA et al., 2016).



Table 5 - Reasons why women did not perform PST

Variables	N°	%
Reason for not performing the preventive		
Lack of information	18	35,3
Fear	6	11,8
Shame	2	3,9
Others	24	47,1
TOTAL	261	100

In terms of women's knowledge about CC, 63.2% (n=165) are aware of the disease (Table 6). The majority of participants, 87.4% (n=228), have some knowledge or have heard about HPV, but 48.3% (n=126) do not know how it is transmitted. On the other hand, a significant portion of the sample, 97.3% (n=254), is familiar with the Papanicolau test, and 81.6% (n=213) reported understanding its importance.

The lack of information among women regarding the transmission of HPV may be attributed to factors such as low socioeconomic status, limited education, geographical location, and inadequate communication with healthcare professionals. These factors can contribute to the spread of HPV infection since the absence of knowledge about transmission prevents individuals from understanding how to prevent it. This lack of knowledge becomes a contributing factor to the increased incidence of HPV and other sexually transmitted infections (SILVA et al., 2020; ROSA et al., 2018).

Table 6 - Knowledge about CC and HPV

Variables	N°	%
Knows what CC is		
Yes	165	63,2
No	96	36,8
Do you know or have heard of HPV		
Yes	228	87,4
No	33	12,6
Know how HPV is transmitted		
Yes	135	51,7
No	126	48,3
Do you know what the Papanicolau is?		
Yes	254	97,3
No	07	2,7
Knows the importance of the exam		
Yes	213	81,6
No	48	18,4
TOTAL	261	100

Table 7 indicates that the majority of women do not participate in informative lectures (n=176, 67.4%). However, 56.7% (n=148) receive guidance from professionals at the BHU, which is a positive aspect. Primary Health Care (PHC) plays a crucial role in educating individuals in this area, particularly through their Community Health Workers (CHWs). CHWs often conduct home visits and have frequent interactions with the community, which can lead to increased adherence to the examination and other health practices (DANTAS et al., 2018; NOGUEIRA and MORAES, 2017).



Table 7 - Participation in informative lectures about CCU and professional orientation on the subject

Variables	Nº	%
Participates or has participated in an informative lecture about CC		
Sim	85	36,2
Não	176	67,4
The BHU professional has already given some orientation on the subject		
Sim	148	56,7
Não	113	43,3
TOTAL	261	100

4. Conclusion

Our findings reveal that the participants reported being aware of Herpes Simplex (HS) and HPV, but 48.3% of them were unaware of how these diseases are transmitted. This lack of knowledge is deeply concerning as it contributes to a higher risk of infections from both diseases due to the failure to use condoms. Another alarming factor is that, due to being in a stable relationship, these individuals do not utilize this protective method, resulting in negative repercussions for the public health system.

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ALEXANDREAPPENDIX
ETHICAL APPROVAL - Appendix 1 - Ethics Committee Review

BRAZIL AMAZON INTEGRATED COLLEGE

CO-SUBSTANTIATED OPINION OF THE ETHICS COMMITTEE

RESEARCH PROJECT INFORMATION

Research Title: Factors related to non-adherence to the Papanicolaou test in the municipality of Porto de Moz, PA.

Researcher: Alexandre Mansue

Thematic Area: Version: 1

CAAE: 63360922.0.0000.8187

Proposing Institution: BRAZIL AMAZON INTEGRATED COLLEGES LTD.

Primary Sponsor: Self-funded

OPINION DETAILS

Opinion Number: 5,676,255

Project Presentation: Contains necessary information for analysis and complies with current scientific research norms and legislation.

Research Objective: Achievable objectives.

Evaluation of Risks and Benefits: Risks and benefits are present in the project, but they will be addressed with the target population.

Comments and Considerations on the Research: Relevant information is included.

Considerations on Mandatory Presentation Terms: All required terms for field research.

Recommendations: No recommendations.

Conclusions or Pending Issues: No pending issues.

List of Inadequacies: No inadequacies.

Final Considerations at the discretion of the Ethics Committee: Approved

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