







# Lesbian and bisexual women's health beliefs about performing the Papanicolaou's test

## Crenças em saúde de mulheres lésbicas e bissexuais acerca da realização do teste de Papanicolaou

### How to cite this article:

Maciel NS, Nascimento ABJ, Castro GB, Bandeira BS, Alves JG, Sousa LB. Lesbian and bisexual women's health beliefs about performing the Papanicolaou's test. Rev Rene. 2023;24:e83154. DOI: <https://doi.org/10.15253/2175-6783.20232483154>

-  Nathanael de Souza Maciel<sup>1</sup>
-  Anna Beatriz Justino do Nascimento<sup>1</sup>
-  Gabriely Bezerra de Castro<sup>1</sup>
-  Breno Sousa Bandeira<sup>1</sup>
-  José Gerefeson Alves<sup>1</sup>
-  Leilane Barbosa de Sousa<sup>1</sup>

\*Extracted from the Final Report of the Institutional Program for Scientific Initiation Scholarship "Crenças em saúde de mulheres lésbicas e bissexuais acerca da realização do exame citopatológico do colo do útero", Universidade da Integração Internacional da Lusofonia Afro-Brasileira, 2022.

<sup>1</sup>Universidade da Integração Internacional da Lusofonia Afro-Brasileira. Redenção, CE, Brazil.

### Corresponding author:

José Gerefeson Alves  
Rua Josué Castelo Branco, 104, Centro  
CEP: 62790-000. Redenção, CE, Brazil.  
E-mail: [gerfesondip@gmail.com](mailto:gerfesondip@gmail.com)

**Conflict of interest:** the authors have declared that there is no conflict of interest.

**Special Call** - Promoting the health of vulnerable populations

EDITOR IN CHIEF: Viviane Martins da Silva  
ASSOCIATE EDITOR: Camila Biazus Dalcin

### ABSTRACT

**Objective:** to identify the health beliefs of lesbian and bisexual women about performing the Papanicolaou's test. **Methods:** cross-sectional study developed exclusively online, with fifty-five participants. Google Forms<sup>®</sup> were used for data collection, with sociodemographic and economic questions, as well as questions related to practices, intention, and beliefs about performing the Papanicolaou's test. Data were organized in Google Sheets<sup>®</sup> and analyzed in SPSS<sup>®</sup> software. **Results:** it was found that bisexual women believe more in the benefit "when I do the preventive exam, I am relieved" ( $p=0.047$ ). However, they have higher scores of ashamed for doing the preventive exam ( $p=0.005$ ). Significant association was identified between having done the exam and perceived benefits ( $p=0.040$ ); perceived severity and education level ( $p=0.006$ ); having done the exam ( $p=0.039$ ); and having fixed partnership ( $p=0.028$ ). **Conclusion:** bisexual women believe that performing the exam generates relief, but feelings of shame may hinder adherence to the exam. Lesbian and bisexual women without access to higher education, who never had the exam, and who have multiple sexual partnerships are more vulnerable to cervical cancer. **Contributions to practice:** reflect on this scenario so that educational strategies are effective for cervical cancer prevention.

**Descriptors:** Sexual and Gender Minorities; Papanicolaou Test; Mass Screening; Health Belief Model; Behavior.

### RESUMO

**Objetivo:** identificar as crenças em saúde de mulheres lésbicas e bissexuais acerca da realização do teste de Papanicolaou. **Métodos:** estudo transversal desenvolvido exclusivamente online, com 55 participantes. Utilizou-se o Google Forms<sup>®</sup> para coleta de dados, com questões sociodemográficas e econômicas, além de questões relacionadas às práticas, à intenção e às crenças na realização do teste de Papanicolaou. Os dados foram organizados no Google Sheets<sup>®</sup> e analisados no software SPSS<sup>®</sup>. **Resultados:** verificou-se que mulheres bissexuais acreditam mais no benefício "quando eu faço o exame preventivo, eu fico aliviada" ( $p=0,047$ ). Contudo, possuem maior pontuação de vergonha de fazer o exame preventivo ( $p=0,005$ ). Identificou-se associação significativa entre ter realizado o exame e benefícios percebidos ( $p=0,040$ ); gravidade percebida e nível de instrução ( $p=0,006$ ); ter realizado o exame ( $p=0,039$ ); e ter parceria fixa ( $p=0,028$ ). **Conclusão:** mulheres bissexuais acreditam que realizar o exame gera alívio, mas o sentimento de vergonha pode prejudicar a adesão ao exame. Mulheres lésbicas e bissexuais sem acesso à educação superior, que nunca realizaram o exame e que possuem múltiplas parcerias sexuais estão mais vulneráveis ao câncer de colo do útero. **Contribuições para a prática:** refletir sobre esse cenário para que estratégias educativas sejam efetivadas acerca da prevenção do câncer de colo do útero.

**Descritores:** Minorias Sexuais e de Gênero; Teste de Papanicolaou; Programas de Rastreamento; Modelo de Crenças de Saúde; Comportamento.

## Introduction

Cervical cancer (CC) represents a relevant injury due to its high incidence and mortality<sup>(1)</sup>. Worldwide, it is responsible for 265 thousand deaths per year, being the fourth leading cause of female mortality. Its high incidence rates occur in sub-Saharan African and Southeast Asian countries<sup>(2)</sup>.

In Brazil, it is estimated of 17,010 cases between the years 2023 and 2025. These data become even more alarming when classified in order of importance and when distributed by regions. It is verified that, disregarding non-melanoma skin tumors, cervical cancer is the second type of cancer with higher incidence in the North and Northeast Regions<sup>(1)</sup>.

Although cervical cancer is preventable through screening (Papanicolaou's test) and vaccination against the human papillomavirus (HPV), it remains a public health problem worldwide<sup>(3)</sup>, since the rates of occurrence and morbidity and mortality still challenge the preventive measures adopted so far, showing deficiencies in supply, access, and quality of actions<sup>(4)</sup>.

The review of barriers to screening and early diagnosis of cervical cancer identified some major barriers to care for women: lack of support, community and social stigma, and spousal consent. Other barriers include individual factors such as accessibility, behaviors, attitudes, values, and practices of nonadherence to screening, namely: embarrassment, socioeconomic status, financial barriers, inability to take time off work, family responsibilities, and feelings of fear<sup>(5)</sup>.

Besides these factors, social vulnerability is highlighted, since there is a lower frequency of Papanicolaou's tests in lesbian and bisexual women, sexual and gender minorities, when compared to heterosexual women. This result suggests that health professionals make this population invisible, and that women do not always seek care, or only do so when symptoms appear. The reasons for the lower demand refer to discrimination, the fact that various lesbian or bisexual women do not find support to assume their sexual orientation, the non-perception of risk practi-

ces, and the unpreparedness of professionals<sup>(6)</sup>.

Despite efforts to understand the factors that influence CC screening behavior, most studies structure their assessment into factors without the application of intrapersonal theories or behavior change frameworks. This is an opportunity, as the use of established theoretical frameworks has been crucial to the development of effective, evidence-based interventions to change health behavior<sup>(7)</sup>. The health belief model is a framework that has been commonly applied to explain methods of resolving interpersonal decisions involving a wide range of health behaviors and the psychological processes involved in these changes<sup>(8)</sup>, including cervical cancer<sup>(9)</sup>.

Therefore, a similar effort is needed to study the beliefs of sexual minority women regarding the Papanicolaou's test, to understand how the constructs of the health belief model are associated with the intention and behavior of CC screening.

Given the gap evidenced in the national and international literature about studies involving the health belief model in lesbian and bisexual women regarding the performance of the Papanicolaou's test, this study becomes relevant because it aims to recognize the barriers to access of this population to services and create a favorable environment, considering the social, cultural, and structural aspects for the use of services, in addition to fostering interventions for behavior change. Thus, the objective was to identify the health beliefs of lesbian and bisexual women about performing the Papanicolaou's test.

## Methods

Cross-sectional research, with a quantitative approach, developed exclusively online, with fifty-five lesbian and bisexual women from June to November 2022.

The following inclusion criteria were adopted: being Brazilian; self-declaring to be lesbian or bisexual; being in the age group recommended as priority for the Papanicolaou's test - age 25 to 64 years<sup>(10)</sup>; and

having started sexual activity. Women with a history of cervical cancer or hysterectomy; who were pregnant; and who had a any cognitive, visual, or hearing limitation that made it impossible to fill out the instruments were excluded.

To describe the population estimate, we adopted the formula used to calculate the sample for the description of quantitative variables in an infinite population. Given the impossibility of establishing the prevalence, we adopted a proportion of 50% (0.5) and the complement of the sample proportion of 50% (0.5). The sampling error adopted was 5% (0.05) and the confidence level was 95% (1.96). Thus, for this study, a minimum of 385 women were expected. However, this number of participants was not reached, and the sample was composed of fifty-five women.

The social network Instagram® was used for dissemination and sample recruitment. The researchers created a post on the official page of the research group Sexual and Reproductive Health Promotion, to which the authors of this article are linked, with information about the study and with the electronic link to access the data collection instrument. The post was boosted weekly during the data collection period.

We conducted a convenience sampling of twenty-two participants initially<sup>(11)</sup>. These participants were referred to as seeds, with a diverse racial and regional composition. Seeds were recruited through posting on Instagram®. Each seed referred the survey to their peers. These were women in the seed participant's social circle, to whom they had previously disclosed their sexual orientation. Peer recruitment was admitted by sharing a link, on media such as WhatsApp®, Facebook® or email<sup>(12)</sup>. Each contacted peer who participated in the study was also named seed and referred the research to others. It should be noted that there were no financial incentives for participation in the research.

To organize the data collection instruments, the free Google Forms® tool was used. The instrument was programmed to record only the answers to the questionnaires that were completed by the partici-

pants. The questionnaire was organized into three blocks: sociodemographic and economic issues; practices and intention to perform the Papanicolaou's test; and health beliefs about the Papanicolaou's test.

The first block included characteristics of the permanent private home, access to basic services and sanitation, access to radio, television, DVD, microcomputer, tablet and internet, widespread characteristics, nuptiality, education characteristics, work and income characteristics, practice of sports and physical activity.

In the second block, questions about the number of tests performed, time of performance, reason for performance and frequency were addressed<sup>(13)</sup>. The intention to perform cervical cancer screening was evaluated with the question: How likely are you to perform cervical cancer screening? This item was answered using an 11-point Likert scale from 0 (no intention) to 10 (strongest intention). The intention item was classified as "low" or "high" intention by the median score of the intention item as the cutoff point<sup>(14)</sup>.

The third block was composed of questions from the Health Belief Model, using a form validated and cross-culturally adapted to Brazil, Champion's Health Belief Model Scale<sup>(13)</sup>. This instrument is composed of twenty-nine questions distributed in four Likert-type scales that contemplate susceptibility, severity, benefits, and barriers. For each question, there are five alternative answers (strongly disagree, disagree, neither agree nor disagree, agree, and strongly agree) and each alternative has a value ranging from one to five. The value of each scale was obtained from the sum of the values of the marked items.

The higher scores on the susceptibility, severity, benefits, and barriers scales imply, respectively, in higher perception of risk, severity, benefits of the Papanicolaou's test and barriers related to cervical cancer prevention<sup>(13)</sup>. The data were organized in Google Sheets® and Microsoft Office Excel® version 2016 software. Subsequently, they were analyzed in SPSS software version 26.0. All results were expressed in tabulations.

To describe the variables, absolute and percentage frequencies were used. For the descriptive analysis, median calculations were applied, as measures of central tendency, and interquartile range, as a measure of dispersion. The Shapiro-Wilk normality test and Levene’s homogeneity test were used for the quantitative variables. Since there was no normality of the data, the nonparametric Mann-Whitney test was used. It was considered statistically significant when  $p < 0.05$ . Evaluating the association between the variables, Pearson’s Chi-square test was used and was considered statistically significant  $p < 0.05$ .

The study complied with the ethical and legal aspects of research with human beings and was approved by the Research Ethics Committee of the University of International Integration of the Afro-Brazilian Lusophony with opinion number 5,468,575/2022 and Certificate of Ethical Appreciation Submission: 56304421,9,0000,5576.

**Results**

Most women (61.8%;  $n=34$ ) declared themselves bisexual and with a fixed sexual partnership (54.5%;  $n=30$ ). All participants could read and write. The median age was 25 (interquartile range - IQR: 3) years. As for the practices and intentions for performing the Papanicolaou’s test, the majority (56.3%;  $n=31$ ) had already performed the exam. The main reason for performing it was screening (47.2%;  $n=26$ ). Overall, the median, on a scale of 0 to 10, of interest in performing CC screening was 9 (IQR: 2).

Most participants resided in the state of Ceará (85.4%;  $n=47$ ), followed by Bahia (5.4%;  $n=3$ ), Amazonas (5.4%;  $n=3$ ), Piauí (1.8%;  $n=1$ ) and Espírito Santo (1.8%;  $n=1$ ). The municipalities of residence of the women with the highest frequency were Baturité (25.4%;  $n=14$ ), Redenção (20.0%;  $n=11$ ) and Fortaleza (12.7%;  $n=7$ ), all in the State of Ceará. The characterization of the profile of the women is presented in Table 1.

**Table 1** – Sociodemographic characteristics of women. Redenção, CE, Brazil, 2022

Variables	Lesbians	Bisexual person	Total
	n (%)	n (%)	n (%)
Race			
Yellow	0	1(1.8)	1 (1.8)
White	6 (40.0)	9 (60.0)	15 (27.3)
Indigenous	1 (100.0)	0	1 (1.8)
Brown	9 (32.1)	19 (67.9)	28 (50.9)
Black	5 (50.0)	5 (50.0)	10 (18.2)
Marital Status			
Single	17 (37.0)	29 (63.0)	46 (83.6)
Married	4 (44.4)	5 (55.6)	9 (16.4)
Religion			
Catholic	8 (47.1)	9 (52.9)	17 (30.9)
Evangelical	1 (33.3)	2 (66.7)	3 (5.5)
Umbanda	4 (44.4)	5 (55.6)	9 (16.4)
Spiritualist	4 (40.0)	6 (60.0)	10 (18.2)
Atheist	2 (28.6)	5 (71.4)	7 (12.7)
Others	2 (22.2)	7 (77.8)	9 (16.4)
Education level			
Up to High School Complete	12 (48.0)	13 (52.0)	25 (45.5)
Higher Education	9 (30.0)	21 (70.0)	30 (54.5)
Zone			
Rural	4 (50.0)	4 (50.0)	8 (14.5)
Urban	17 (36.2)	30 (63.8)	47 (85.5)
Housing			
Owned	11 (42.3)	15 (57.7)	26 (47.3)
Rented	10 (34.5)	19 (65.5)	29 (52.7)
Income (minimum wage)			
< 1	4 (30.8)	9 (69.2)	13 (23.6)
1	7 (35.0)	13 (65.0)	20 (36.4)
2	5 (41.7)	7 (58.3)	12 (21.8)
3	2 (50.0)	2 (50.0)	4 (7.3)
≥ 3	3 (51.0)	3 (50.0)	6 (10.9)

Table 2 exposes the comparison between the scores of each item of the health belief scales regarding the sexual orientation of the women. It was found that bisexual women believe more in the benefit of the exam ( $p=0.047$ ). However, they have higher scores regarding shame in taking the exam ( $p=0.005$ ).

**Table 2** – Comparison between the scores of each item of the scales of health beliefs regarding women's sexual orientation. Redenção, CE, Brazil, 2022

Variables	Les- bians	Bisexual person	P <sup>†</sup>
	Median (IQR*)	Median (I)	
<b>Susceptibility</b>			
I am sure I will get CC‡ someday	3 (1)	2 (2)	0.099
I think I will get CC someday	3 (2)	3 (2)	0.717
I have a high chance of getting CC in the next 10 years	3 (2)	2 (2)	0.084
My chance of getting CC is high	3 (2)	2 (2)	0.083
I am more likely to have CC than other people	3 (2)	2 (2)	0.686
<b>Severity</b>			
The thought of CC terrifies me	3 (3)	3 (3)	0.843
When I think about having a CC, my heart races	3 (3)	2 (3)	0.666
I am afraid to even think about CC	3 (3)	2 (3)	0.409
The problems with CC would last a long time.	3 (3)	3 (3)	0.457
CC could threaten my relationship with my partner	3 (3)	2 (2)	0.476
If I had CC, my whole life would change	3 (3)	2 (3)	0.605
If I have CC, I will not live more than five years	2 (2)	2 (2)	0.798
<b>Benefits</b>			
When I get tested, I am relieved	1 (3)	3 (3)	0.047
When I get tested, I do not worry about CC	2 (2)	3 (3)	0.137
Getting tested helps you find CC early	1 (3)	1 (3)	0.286
Getting tested decreases, the chance of dying from CC	1 (3)	1 (3)	0.913
Getting tested decreases, the chance of having major surgery	1 (2)	1 (3)	0.217
<b>Barriers</b>			
Shame to do the preventive exam	1 (0)	2 (3)	0.005
Fear of diagnosis	1 (3)	2 (3)	0.117
Fear because I do not know what they will do to me	1 (1)	2 (3)	0.056
I do not know what to do to schedule the preventive exam	1 (1)	2 (3)	0.194
The preparation for the exam will take a long time	1 (2)	2 (2)	0.555
I think the preventive exam will hurt too.	1 (3)	1 (2)	0.791
The people who do the exam can be rude	1 (2)	2 (3)	0.091
It is hard to get a ride to go to the exam	1 (2)	2 (2)	0.580
I have more important things to do	1 (1)	1 (1)	0.504
The preventive examination will disrupt my life	1 (1)	1 (1)	0.984
The preventive exam is too expensive	1 (2)	1 (2)	0.808
I always forget to schedule the preventive exam	1 (1)	2 (2)	0.111

\*IQR: Interquartile range; †Mann-Whitney test; ‡CC: Cervical cancer

When relating the sociodemographic data to the classification of the belief scores, a significant association was identified between performing the exam and perceiving its benefits ( $p=0.040$ ), with a higher

frequency of medium or high perception among women who had already undergone the exam (61.3%;  $n=19$ ); severity and level of education ( $p=0.006$ ), with women with higher education having medium or high perception (80.0%;  $n=24$ ); severity and exam performance ( $p=0.039$ ), with higher frequency of medium or high perception among women who had already taken the exam (77.4%;  $n=24$ ); and fixed partnership and severity ( $p=0.028$ ), with higher proportion of medium and high perception among those with fixed partnership (76.7%;  $n=23$ ). Table 3 presents the comparison between the scores of health beliefs regarding women's sexual orientation.

**Table 3** – Comparison between the scores of health beliefs regarding sexual orientation of women. Redenção, CE, Brazil, 2022

Variables	Lesbians	Bisexual person	Total	p-value <sup>†</sup>
	Median (IQR)*	Median (IQR)	Median (IQR)	
Susceptibility	15 (5)	11 (9)	13 (7)	0.232
Severity	20 (17)	17 (8)	17 (11)	0.631
Benefits	9 (9)	11 (13)	10 (11)	0.179
Barriers	18 (17)	23 (17)	22 (17)	0.173

\*Interquartile range; †Mann-Whitney test

It was found that there was no statistical difference between the health belief scores of lesbian and bisexual women.

## Discussion

It was observed that there are factors of direct responsibility of health services that are related to the desire to perform the exam, its benefits, and the perception of severity of CC. Thus, this research emphasizes the need for health teams to develop strategies for searching and welcoming lesbian and bisexual women, so that feelings of shame, for example, are mitigated, and that patients perceive the benefits of performing the exam with the recommended frequency.

It was found that among the study participants, there was a prevalence of bisexuals, with fixed part-

nerships, and single women. The predominance of bisexual identity among the participants reveals a higher probability of exposure to sexual intercourse with penile penetration. The transmission of human papillomavirus (HPV) can occur in any type of sexual intercourse and can affect the anus, vulva, vagina, penis, and oropharynx; however, most women with CC were infected soon after sexarch, with progressive development of lesions<sup>(15)</sup>.

It is alerted, however, that lesbian women may also be vulnerable, since most have already had previous sexual experience with men and, considering that sexuality can change throughout life, even women who define themselves as lesbians can establish sexual intercourse with penile penetration<sup>(16)</sup>. Moreover, other forms of contamination, besides sexual contact with penile penetration, need to be considered.

The sexual relationship with a fixed partner may constitute a vulnerability factor, due to the false impression that not being exposed to multiple partners represents a lower risk. However, the development of cervical cancer is conditioned to HPV contamination and associated with individual factors. HPV, in turn, is a highly transmissible virus that can remain in latency for a prolonged period<sup>(17)</sup>. These characteristics reinforce the importance of the screening test and the vulnerability of all women who have established unprotected sexual intercourse, even with a fixed partnership.

Slightly more than half of the participants in this study stated that they had performed the exam and declared an interest in doing so. It is verified that the number of lesbian and bisexual women who have never undergone cervical cancer screening is still large, especially considering the goal of 80% coverage for the female population in general.

Women who have sex with women present a similar percentage of adherence to the Papanicolaou's test (52.7%), but it was highlighted that, among these women, most underwent the exam only once<sup>(18)</sup>. Given the low adherence to the exam, it is necessary that active search and welcoming strategies be implemented

to ensure the inclusion of lesbians and bisexuals and increase the coverage of the Papanicolaou's test for these populations. Furthermore, lesbian, and bisexual women, when they manage to access health services, experience greater challenges regarding the prevention of cervical cancer<sup>(19-20)</sup>.

It was identified the belief, for bisexual women, who performing the Papanicolaou's test generates relief, probably because it is a health care related to the verification that there is no development of cervical cancer. On the other hand, it was also found that the same public revealed to be embarrassed to undergo the exam, which may represent a reason for non-adherence. The Papanicolaou's test itself is considered a procedure that involves diverse feelings related to the embarrassment of exposing the body and sexual practices. The feeling of shame reported by the participants may be related to the reception of this public and/or the posture of the health professional in conducting the gynecological consultation, especially regarding sexual behavior.

In the health system, lesbian and bisexual women suffer prejudice related to religious judgment of sexual practice and negligence associated with the assumption that lesbians do not need to undergo the Papanicolaou's test because they have never had sexual intercourse with penetration<sup>(21-23)</sup>. These issues may impact access to care and, consequently, the development of cervical cancer, which requires urgency in training health professionals to offer inclusive care to vulnerable populations, such as lesbians and bisexuals.

The level of education of the participants is significantly related to the perception of severity, since women who entered higher education have medium or high perception. Access to formal education seems to positively influence not only obtaining health information, but the understanding of the message surrounding this information. Research developed with thirty-five university lesbians observed good adherence to gynecological consultation (77.1%), a fact that may be associated with the higher educational level<sup>(24)</sup>.

In fact, high incidence, and prevalence rates of CC are identified in underdeveloped and/or developing countries, which tend to present low socioeconomic and educational levels. In Brazil, for example, the estimated incidence rate for 2023 is 15.38%, a value that is much higher than the estimates of developed countries such as Australia and New Zealand, both with an estimated incidence rate of 5.6%<sup>(1-2)</sup>.

The previous experience of the exam is related both to the perception of the benefits of the exam and the severity of the CC. This finding may result from information that patients acquired during gynecological consultations, since on this occasion there may be clarification about the disease and the importance of the Papanicolaou's test for secondary prevention of this disease. Health education during gynecological consultations can broaden knowledge and positively influence the adoption of healthy attitudes and practices, including the perception of the need to perform the Papanicolaou's test<sup>(25-26)</sup>.

The fact of having a steady partner was also, in this study, significantly associated with the awareness of the severity of cervical cancer. About the relationship between sexual practices and health care, a research analyzing sexual practices of 231 women who have sex with women found that those who do not have a steady partnership were more vulnerable to sexual intercourse without using condoms, with higher chances of not using this protection method than women who do not have a steady partnership<sup>(27)</sup>.

### Study limitations

The research had the limitation of collecting data online, which may imply in misinterpretations of the questions addressed in the questionnaire, since the interviewer was not present to clarify any doubts. However, we emphasize that because it is a previously validated instrument, the results obtained are dependable and offer important scientific contributions. Another weakness refers to the sample size, since the small number of participants may compromise the ge-

neralizability of the study to the population. Furthermore, the data from this study provide the literature with information and gaps for future studies.

### Contributions to practice

These findings arouse reflection about the multiple vulnerabilities of women who have relationships with women without a fixed partnership, since besides being more exposed due to sexual intercourse without condom use, they are still less aware of the seriousness of cervical cancer. This reality can favor the development of cervical cancer by the increased exposure to human papillomavirus and the eventual non-adherence to the Papanicolaou's test. It is necessary that educational strategies directed to this audience contemplate the importance of primary and secondary prevention of the disease.

### Conclusion

Bisexual women have the belief that performing the Papanicolaou preventive exam generates a sense of relief; however, this public also revealed feeling ashamed to perform the exam, which may hinder adherence to secondary prevention with the necessary regularity. Higher education, previous exam performance, and/or the existence of a fixed sexual partnership were associated with greater perception about the severity of cervical cancer, which highlights the fact that lesbian and bisexual women without access to higher education, who have never undergone the Papanicolaou's test and/or have multiple sexual partnerships are more vulnerable to cervical cancer.

### Authors' contribution

Conception and design or analysis and interpretation of data; Writing of the manuscript or relevant critical review of the intellectual content; Final approval of the version to be published; Agreement to be responsible for all aspects of the manuscript related to the

accuracy or completeness of any part of the manuscript: Maciel NS, Nascimento ABJ, Castro GB, Bandeira BS, Alves JG, Sousa LB.

## References

1. Ministério da Saúde (BR), Instituto Nacional de Câncer José Alencar Gomes da Silva. Dados e números sobre câncer do colo do útero: relatório anual 2022 [Internet]. 2022 [cited Jan 13, 2023]. Available from: <http://www.inca.gov.br/uter0>
2. Sung H, Ferlay J, Siegel RL, Laversanne M, Soerjomataram I, Jemal A, Bray F. Global Cancer Statistics 2020: GLOBOCAN Estimates of Incidence and Mortality Worldwide for 36 Cancers in 185 Countries. *CA Cancer J Clin.* 2021;71(3):209-49. doi: <https://doi.org/10.3322/caac.21660>
3. Silva GA, Alcantara LLM, Tomazelli JG, Ribeiro CM, Girianelli VR, Santos EC, et al. Evaluation of cervical cancer control actions within Brazil and its regions based on data recorded in the Brazilian Unified National Health System. *Cad Saúde Pública.* 2022;38(7):e00041722. doi: <https://doi.org/10.1590/0102-311XPT041722>
4. Vieira YP, Viero VSF, Vargas BL, Nunes GO, Machado KP, Neves RG, et al. Trends and inequalities in self-reported cervical cancer screening in Brazilian capitals from 2011 to 2020. *Cad Saúde Pública.* 2022;38(9):e00272921. doi: <https://dx.doi.org/10.1590/0102-311XPT272921>
5. Pierz AJ, Randall TC, Castle PE, Adedimeji A, Ingabire C, Kubwimana G, et al. A scoping review: facilitators and barriers of cervical cancer screening and early diagnosis of breast cancer in Sub-Saharan African health settings. *Gynecol Oncol Rep.* 2020;33:100605. doi: <https://dx.doi.org/10.1016%2Fj.gore.2020.100605>
6. Everett BG, Higgins JA, Haider S, Carpenter E. Do sexual minorities receive appropriate sexual and reproductive health care and counseling? *J Womens Health.* 2019;28(1):53-62. doi: <https://doi.org/10.1089%2Fjwh.2017.6866>
7. Tallon B, Monteiro D, Soares L, Rodrigues N, Morgado F. Tendências da mortalidade por câncer de colo no Brasil em 5 anos (2012-2016). *Saúde Debate.* 2020;44(125):362-71. doi: <https://doi.org/10.1590/0103-1104202012506>
8. Lau J, Lim TZ, Jianlin Wong G, Tan KK. The health belief model and colorectal cancer screening in the general population: a systematic review. *Prev Med Rep.* 2020;20:101223. doi: <https://doi.org/10.1016%2Fj.pmedr.2020.101223>
9. Nelas PA, Coutinho E, Chaves C, Duarte J, Cruz C, Dionísio R, et al. Crenças em saúde relativas ao cancro do colo do útero. *Int J Dev Educ Psychol.* 2020;2(1):417-24. doi: <http://doi.org/10.17060/ijodaep.2020.n1.v2.1864>
10. Ministério da Saúde (BR). Diretrizes brasileiras para o rastreamento do câncer do colo do útero. [Internet]. 2016 [cited Jan 13, 2023]. Available from: <https://www.inca.gov.br/publicacoes/livros/diretrizes-brasileiras-para-o-rastreamento-do-cancer-do-colo-do-uter0>
11. Bauermeister JA, Zimmerman MA, Johns MM, Glowacki P, Stoddard S, Volz E. Innovative recruitment using online networks: lessons learned from an online study of alcohol and other drug use utilizing a web-based, respondent-driven sampling (webRDS) Strategy. *J Stud Alcohol Drugs.* 2012;73(5):834-8. doi: <https://dx.doi.org/10.15288%2Fjsad.2012.73.834>
12. Helms YB, Hamdiui N, Kretschmar MEE, Rocha LEC, van Steenberghe JE, Bengtsson L, et al. Applications and recruitment performance of web-based respondent-driven sampling: scoping review. *J Med Internet Res.* 2021;23(1):e17564. doi: <https://doi.org/10.2196%2F17564>
13. Rafael R, Moura A. Health Belief Model and cervical cancer screening: assessing vulnerabilities. *Rev Enferm UERJ.* 2017;25:e26436. doi: <https://doi.org/10.12957/reuerj.2017.26436>
14. Sumarmi S, Hsu YY, Cheng YM, Lee SH. Factors associated with the intention to undergo Pap smear testing in the rural areas of Indonesia: a health belief model. *Reprod Health.* 2021;18(138):138. doi: <https://doi.org/10.1186%2Fs12978-021-01188-7>
15. Organização Pan-Americana da Saúde. HPV e câncer do colo do útero [Internet]. 2022 [cited Jan 13, 2023]. Available from: <https://www.paho.org/pt/topicos/hpv-e-cancer-do-colo-do-uter0>
16. Cabral KTF, Pereira IL, Almeida LR, Nogueira WBAG, Silva FV, Costa LFP, et al. Nursing care for lesbian and bisexual women. *Rev Enferm UFPE on line.* 2019;13(1)79-85. doi: <https://>



- dx.doi.org/10.5205/1981-8963-v13i01a237896p79-85-2018
17. Paula T, Ferreira M, Marin M, Meneguim S, Ferreira A. Detecção precoce e prevenção do câncer de colo uterino: saberes e práticas educativas. *Enferm Foco*. 2019;10(2):47-51. doi: <https://doi.org/10.21675/2357-707X.2019.v10.n2.1624>
  18. Londero GR, Braz MM. Sexual health of women who have sex with women: prevention of sexually transmitted infections. *Rev Contexto Saúde*. 2021;21(43):214-24. doi: <https://dx.doi.org/10.21527/2176-7114.2021.43.11312>
  19. Cerqueira RS, Santos HLPC, Prado NMBL, Bitencourt RG, Biscarde DGDS, Santos AM. Control of cervical cancer in the primary care setting in South American countries: systematic review. *Pan Am J Public Health*. 2022;46:e107. doi: <https://doi.org/10.26633/rpsp.2022.107>
  20. Rodrigues JL, Falcão MTC. Experiences of gynecological care by lesbian and bisexual women: (in)visibility and barriers to the exercise of the right to health. *Saúde Soc*. 2021;30(1):e181062. doi: <https://dx.doi.org/10.1590/S0104-12902021181062>
  21. Gomes R. Narratives of the Brazilian homosexual movement on the health of gays and lesbians. *Ciênc Saúde Coletiva*. 2022;27(2):555-65. doi: <https://doi.org/10.1590/1413-81232022272.05062021>
  22. Felix JLP, Araújo BRO, Oliveira MM, França AMB. Assistência à saúde da mulher lésbica: formação profissional e impactos em todas as fases da vida. *Cad Grad Ciênc Biol Saúde* [Internet]. 2022 [cited Jan 13, 2023];7(2):20-34. Available from: <https://periodicos.set.edu.br/fitsbiosauade/article/view/9385/4975>
  23. Ketzer N, Vieira LB, Schneck CA, Maffaccioli R, Strada J, Patuzzi G, et al. Sexual and reproductive health in primary health care: reports of lesbian women. *Rev Baiana Enferm*. 2022;36:e45637. doi: <https://doi.org/10.18471/rbe.v36.45637>
  24. Santos FHR, Parreira BDM, Pan R. Women's health: a study with lesbian college students. *Res Soc Dev*. 2022;11(14):e414111436448. doi: <https://dx.doi.org/10.33448/rsd-v11i14.36448>
  25. Ribeiro LL, Góes, CFA. Processo de trabalho de enfermeiras na consulta ginecológica. *Rev Enferm Contemp*. 2021;10(1):51-9. doi: <https://dx.doi.org/10.17267/2317-3378rec.v10i1.3334>
  26. Nunes VLS, Resende WA, Cabral GVS, Oliveira FSR, Silva RRS. The importance of health education as a form of prevention to breast cancer: an experience report in a basic health unit of Palmas/TO. *Rev Ext [Internet]*. 2020 [cited Jan 13, 2023];4(2):108-14. Available from: <https://revista.unitins.br/index.php/extensao/article/view/4219>
  27. Cavalcante DR, Ribeiro SG, Pinheiro AKB, Soares PRAL, Aquino PS, Chaves AFL. Sexual practices of women who have sex with women and condom use. *Rev Rene*. 2022;23:e71297. doi: <https://doi.org/10.15253/2175-6783.20222371297>



This is an Open Access article distributed under the terms of the Creative Commons