RESEARCH

PROXIMAL SOCIAL DETERMINANTS RELATED TO CERVICAL CANCER IN IMPRISIONED WOMEN

DETERMINANTES SOCIAIS PROXIMAIS RELACIONADOS AO CÂNCER CERVICOUTERINO EM MULHERES PRIVADAS DE LIBERDADE

DETERMINANTES SOCIALES PROXIMALES RELACIONADOS CON EL CÁNCER DE CUELLO UTERINO EN MUJERES PRIVADAS DE LIBERTAD

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ABSTRACT

Objective: this study aimed to analyze the social determinants of proximal health considered as risk factors for cervical-uterine neoplasia in imprisoned women according to level 2 of the Model of Care for Chronic Conditions (MACC). **Method:** this was a descriptive, quantitative research, conducted in Ceará State women's prison involving 155 inmates. Data collection occurred from January to March of 2010 through individual interviews. The interview forms contemplated sociodemographic, sexual, reproductive, and smoking data. **Results:** The detected main factors were associated with low education and family income, precocity of first sexual intercourse, lack of condom use, parity, low coverage of screening, and smoking habits. **Conclusion:** the studied women are exposed to very high risks to the development of cervical cancer both by their life trajectories and their current prison situation.

Keywords: Women's Health; Risk Groups; Uterine Cervical Neoplasms.

RESUMO

Objetivo: *este estudo objetivou analisar os determinantes sociais de saúde proximais, considerados fatores de risco para a neoplasia cervicouterina, de mulheres privadas de liberdade segundo o nível 2 do Modelo de Atenção às Condições Crônicas (MACC).* ***Método:*** *pesquisa descritiva, quantitativa, realizada na penitenciária feminina do estado do Ceará, envolvendo 155 presidiárias. A coleta de dados ocorreu de janeiro a março de 2010, por meio de entrevista individual. Os formulários contemplaram dados sociodemográficos, sexuais, reprodutivos e tabagistas.* ***Resultados:*** *os principais fatores encontrados direcionaram-se para a baixa escolaridade e renda familiar mensal, precocidade da coitarca, não uso do preservativo, paridade, baixa cobertura do rastreamento e hábitos tabagistas.* ***Conclusão:*** *as mulheres estudadas estão expostas a altíssimos riscos para o desenvolvimento do câncer de colo uterino tanto por suas trajetórias de vida quanto pela atual situação de cárcere.*

Palavras-chave: *Saúde da Mulher; Grupos de Risco; Neoplasias do Colo do Uterino.*

RESUMEN

Este estudio tuvo como objetivo analizar los determinantes sociales proximales de la salud considerados factores de riesgo para la neoplasia de cuello uterino en mujeres privadas de libertad según el nivel 2 del Modelo de Atención para las Condiciones Crónicas (MACC). Se trata de una investigación descriptiva y cuantitativa realizada en un penal de mujeres del estado de Ceará con 155 prisioneras. La recogida de datos ocurrió de enero a marzo de 2010, a través de entrevistas individuales. Se tuvieron en cuenta datos sociodemográficos, sexuales, reproductivos y de tabaquismo. Los principales factores encontrados se refieren a la baja escolaridad e ingreso familiar, la precocidad de la primera relación sexual, que no usaban condones, la paridad, la baja cobertura del rastreo y la costumbre de fumar. Las mujeres estudiadas están expuestas a altísimos riesgos para el desarrollo del cáncer de cuello uterino, tanto por sus trayectorias de vida como por la situación carcelaria actual.

Palabras clave*: Salud de la Mujer; Grupos Vulnerables; Neoplasias del Cuello Uterino.*

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INTRODUCTION

The problem of violence in the contemporary social reality has raised crime rates in small and large centers worldwide. The male gender is historically more associated with crime and prison prevalence in Brazil; the female participation in the prison settings is equivalent to 6.1%.[1] However, women are more vulnerable to physical and psychological health problems inherent to the prison environment. This, in turn, provides more exposure to psychological and physical risks and transmission of infectious diseases, and therefore, worldwide prison populations tend to require increased health assistance.[2]

Although the exposed environment portrays the reality lived in prisons, health promotion strategies for women's health and prevention of sexually transmitted diseases (STDs)/ human immunodeficiency virus (HIV), and cervical cancer, which is more prevalent in occurrence and adoption of risk behaviors among prisoners than in the general population, is little prioritized in Brazilian prisons.

Considering the sociobiological etiology of cervical cancer, it is thought that the social and economic background unfavorable plan, combined with risk behaviors present in the prison environment, favors the increased vulnerability of this neoplasia in inmate women.[3] In addition, the women's vulnerability resulting from gender issues puts them in a position of submission, which hinders the negotiation of preventive measures and makes them more prone to acquiring infections. In 2003, the Ministry of Health in partnership with the Ministry of Justice, included women's health as a strategy for primary care proposed by the National Health Plan for the Prison System (PNSSP), emphasizing the control of this type of cancer through screening in the very prisional institution.[4]

In Brazil, in 2014, 15,590 new cases were expected, with an estimated risk of 15 cases per 100,000 women. Excluding non-melanoma skin tumors, cervical cancer is the most frequent in the Northern region and ranks second in the Midwest and Northeast regions. Moreover, the incidence is about two times higher in developing countries.[5]Although being considered a necessary condition, the infection with human papillomavirus (HPV) by itself is not a sufficient cause for the emergence of cancer. In addition of HPV itself, other factors appear to influence the related mechanisms, still uncertain, which determine the regression or persistence of infection and also the progression of premalignant lesions or cancer, namely: immunity, sexual behavior, smoking, early sexual intercourse, multiple sexual partners, age, multiparity, low socioeconomic and educational levels, and use of oral contraceptives.[6]The imperative of proper management of chronic conditions in the world population, including cancer, culminated in the creation of effective models to offer a theoretical and practical support for the reorganization of health care systems in their different areas of action. Namely, the Care Model for Chronic Conditions (MACC) is inserted into a model adapted to the Brazilian public system.

The MACC is based on the *Chronic Care Model* and incorporates two other models: the Pyramid Risk Model, by convening a population-based management that stratifies the population according to risks; and the Social Health Determination Model, which operates with a wide comprehensive health perspective. It is added that the MACC was proposed to be applied in macro (policies), meso (healthcare organization and community), and micro areas (ratio of health staff/users).[7]

On its structure, the model in question is presented in five levels. At level 1, the interventions are in promoting health in relation to the total population, focusing on intermediate social determinants (living and working conditions). Level 2 covers the prevention of health conditions in sub-populations at risk, through interventions on the proximal social determinants related to behaviors and lifestyles. It is noteworthy that up to level 2, there is no established health condition or the manifestation of a bio-psychological risk factor. Level 3 begins operating on a bio-psychological risk factor and/or a health condition whose severity, expressed in complexity, calls for different interventions by the health care system. In this third level, operations will be primarily through supported self-care interventions. At level 4, the operation is balanced between supported self-care and professional care. Finally, level 5 is designed to focus on very complex and chronic conditions that are also related to guidelines on the respective health conditions.[7-8]

For this study, the MACC level 2 will be the base for the context related to the prevention of cervical cancer in the subpopulation of women in prison from the investigation of social determinants of proximal health, i.e., behaviors and lifestyles seen as modifiable risk factors associated with cervical cancer neoplasia.

The choice of the best intervention, whether behavioral, cognitive, or social, for the sake of reducing morbidity and mortality from cervical cancer, should take into account the characteristics of the target population and the environment in which it will be applied.[9] Therefore, multidisciplinary health teams acting in prisons need to promote effective and consistent interventions with the peculiarities of the group in question. An effective system of risk factors surveillance is fundamental to the preparation of a plan, its implementation, and the evaluation of the impact of actions and strategic programs.

Thus, this study has the objective of analyzing the social determinants of proximal health considering risk factors for uterine cervical neoplasia and discuss them in the prison condition according to MACC level 2. The research results will indicate the diagnostic situation in that female population, which will provide subsidies for the creation of future educational pol-

icies and strategies that will facilitate the prevention of cervical cancer congruently with the singularities found.

METHOD

This was a quantitative approach study with the purpose to describe. Transverse models involve the collection of data at any given time point. Therefore, all the studied phenomena are contemplated over the period of data collection. In descriptive studies, researchers observe, count, outline, elucidate, and classify.[10]

The research scenario consisted of a women's prison with a capacity of 300 inmates. Such an institution is in the process of restructuring to comply with the PNSSP, already counting on a multidisciplinary healthcare team (nurse, nursing technicians, general practitioner, pediatrician, gynecologist, dentist, dental assistant, social worker, and psychologist) and one clinic.The study population consisted of women inmates at the institution during the collection period, excluding cases that hindered the provision of information to be collected. Through the calculation of finite populations, the sample included 155 women from a population size of 258, with 95% confidence interval, the maximum permissible error of 0.05, and prevalence of 50%. There was no sample loss. Data collection occurred from January to March of 2010. Initially, a campaign was conducted by the researchers and prison officers in the institutional spaces. During the process of recruitment of a non-probabilistic sample and on the days of data collection, women who were previously interested in participate were escorted in small groups by prison agents from their workplaces in prison to the school area. Individual interviews were conducted in the school's classrooms located within the prison.A structured form was used to register information regarding sociodemographic characteristics, sexual and reproductive history, and smoking habits. In greater detail, the following variables were investigated: type of offense, age, education, household income, marital status, age of onset of sexual activity, number of sexual partners, condom use, sexual behavior, parity, gynecological screening in the institution, and smoking habits.Data were compiled using the Statistical Package for Social Sciences (SPSS) version 17.0. The absolute and relative frequencies of variables and measures of central tendency and dispersion were calculated (standard deviation – SD). The Kolmogorov-Smirnov test was used to verify the normality distribution of the required variables.

The inmates were verbally invited to participate in the research; objectives and procedures were disclosed to them. Acceptance was formalized with the signing of a free and informed consent. The ethical aspects of research involving human beings were respected. The project was approved by the Ethics Committee on Research of the Federal University of Ceará (UFC) under protocol number 229/09.

RESULTS

SOCIODEMOGRAPHIC RISKS

Table 1 shows the sociodemographic data. The median was adopted as a measure of central tendency because variables showed asymmetric distribution ($p < 0.05$) by the Kolmogorov-Smirnov test (KS).

Table 1 - Socio-demographic data of inmates in Ceará. Aquiraz, Ceará, 2010

Variables	*f*	%	Statistics
Type of offense			
Drug dealing	76	48.9	
Theft	31	20.0	
Stealing	26	16.7	
International drug dealing	6	3.9	
Homicide	4	2.6	
Others	12	7.9	
Age			
18 |-| 24	61	39.4	Median ± SD = 28.0 ± 9.0 KS test p = 0.023
25 |-| 31	38	24.5	
32 |-| 38	28	18.1	
39 |-| 45	16	10.3	
46 |-| 56	12	7.7	
Education (years in school)			
Nenhum	4	2.6	Median ± SD = 7.0 ± 3.3 KS test p = 0.043
1 |-| 8	88	56.8	
8 -| 9	23	14.8	
9 -| 11	17	11.0	
11 -| 12	16	10.3	
>12	7	4.5	
Family income (in minimum wages*)			
≤1	87	56.1	Median ± SD = 510.0 ± 1055.5 KS test p = 0.000
1 -| 3	37	23.9	
3 -| 5	7	4.5	
5 -| 7	6	3.9	
>7	5	3.2	
Not reported	13	8.4	

Continued...

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Table 1 - Socio-demographic data of inmates in Ceará. Aquiraz, Ceará, 2010

Variables	*f*	%	Statistics
Marital status			
Single	73	47.1	
Married	11	7.1	
Consensual union	59	38.1	
Widower	4	2.6	
Divorced	8	5.1	

*Current minimum wage R$510.00.

Table 2 - Sexual, reproductive, and smoking aspects of inmates in Ceará. Aquiraz, Ceará, 2010

Variables	*f*	%	Statistics
Age of first sexual intercourse			
<11	3	1.9	Median ± SD = 15 ± 2.7 KS test p = 0.006
11 ⊢⊣ 13	43	27.8	
14 ⊢⊣ 16	78	50.3	
17 ⊢⊣ 19	24	15.5	
20 ⊢⊣ 23	7	4.5	
Nº of partners in the last three months			
None	60	38.7	Median ± SD= 1 ± 14.4 KS test p= 0.00
1 ⊢⊣ 3	92	59.4	
>3	3	1.9	
Use of condoms	31	20.0	
Sexual behavior			
Heterossexual	98	63.2	
Homossexual	22	14.2	
Bissexual	35	22.6	
Parity			
None	30	19.4	Median ± SD = 2.0 ± 2.3 KS test p = 0.000
1 to 2	65	41.9	
3 to 4	35	22.6	
5 to 6	16	10.3	
More than 6	9	5.8	
Gynecological assistance in the institution	65	42.0	
Time since the last exam			
deles than one year	54	83.0	
1 year	6	9.3	
More than one year	3	4.7	
Do not remember	2	3.0	
Smoking	104	67.1	

The analysis of the reasons why the studied women are court-bound highlighted drug trafficking as the main reason. The combination of women who performed this activity in Brazil along with those involved in international traffic accounted for 82 (52.8%) inmates included in this source of illegal income.

The information on the age of participants revealed a population involved in the criminal world at an early age. The youngest age group, 18-24 years old, showed the highest frequency, with 61 (39.4%) women. It is noteworthy that 99 inmates, or 65%, were up to 31 years old.

The socio-demographic educational analysis portrayed the reality of many Brazilians. More than half of participants (56.8%) failed to complete middle school (less than nine years of schooling). Moreover, it was noticed that the maximum education level of the 115 (74.2%) women did not exceed the completion of middle school, ranging from no school experience to the completion of 9th grade.

The family income data unveiled another unfavorable socio-economic aspect; 87 (56.1%) reported having a monthly income of up to one minimum wage, thus, 19 (13.4%) had an income of no more than R$200.00. The income of 124 (80%) studied women ranged from R$82.00 to R$1,530.00.

The marital status data showed that 73 (47.1%) were single, representing the most frequent marital status. The marital union was present in 70 (45.2%) women, among married and in consensual unions.

Risks related to sexuality, reproduction, and smoking

The age of first sexual intercourse showed that 124 (80.1%) began before age 17. It is noteworthy that 148 (95.6%) had their first intercourse at adolescence – 46 (29.8%) before 14 years of age.

The number of sexual partners in the last three months showed a high frequency – 81 women (52.3%) with a single partner. Thus, 92 (59.4%) had one to three partners. It should be noted that out of the 95 with sexual partners, 86 (90.5%) were in a steady relationship (data not shown). Therefore, the limited range of these partnerships was observed, with a median of one.

However, it is common to women to have partners who are also imprisoned or even have a history of prostitution (not shown data), given that 53 (34.2%) women have undertaken such an activity, a factor that aggravates the risks experienced in this context.

Despite the lack of partners variety, the investigation on the practice of using condoms (male and female) showed unfavorable results. Only 29 women (18.7%) showed adequate practice in using male condoms and two (1.3%) in using female preservatives, i.e., always used in all sexual relations.

In addition to not using preventive measures, homosexuality was evident as a common practice in the sexual profile of the sample; those who called themselves bi/homosexual totaled 57 (36.8%). It is common for women to engage with other inmates in the same prison institution; however, there are also cases that the partner is not an inmate. In both situations, conjugal visits and condoms are not insured, which leads to relationships occurring in inappropriate places and conditions.

On the obstetrical information while 65 (41.9%) inmates had one or two children, higher parity with three or more children was determined in 60 (38.7%) women. When asked about gynecological monitoring in prison, 65 women (42%) confirmed having it, i.e., most of them never had a gynecological exam until being in prison. Among those that were contemplated, 60 (92.3%) had their last examination in the last one year or less, and only three (4.7%) in more than one year.

Smoking was present in 104 (67.1%) inmates; consumption is permitted inside the institution. During the development of this study, some women reported that they did not smoke before being in prison, however, acquired this habit as a way to relieve the stresses of life in prison. Others see the incarceration time as an opportunity to reduce or even quit smoking.

DISCUSSION

The Unified Health System (SUS) is a public system with clear responsibilities over territories and populations. In this respect, the population-based management calls for a model that stratifies the population according to risks, which led to the incorporation of the Pyramid Risk Model and the Social Health Determination Model by the MACC. The social determinants of proximal health, coming from behaviors and lifestyles, are considered risk factors.[8] These factors are defined as characteristics or attributes whose presence increases the possibility of presenting a health condition, and may be modifiable or non-modifiable. The simultaneity of risk factors creates a synergy that ultimately enhance health problems. From this perspective, we begin the discussion of such vulnerability factors involved in the development of cervical cancer in the studied inmates.

Sociodemographic risk

The distribution of the observed crimes was superior to the data provided by the National Penitentiary Department (DEPEN) in 2013, except in the representation of homicides. According to this institution, in the State of Ceará, 15.6% of women inmates were responding to drug trafficking, 19.6% for theft, and 18.1% for homicide.[11] Homicide was less expressive in our study, with four (2,6%) cases only.

The DEPEN, by consolidating data of the prison population, revealed a classification that is similar to that found for age, confirming the increasingly early entry into criminal life.[1] In the State of Ceará, in 2013, 20.1% of inmates were aged between 18 and 24 years old.[11]

Age is also configured as interfering in the cervical cancer process. The majority of HPV infections in women under 30 years old regress spontaneously while above this age, persistence is more frequent. The incidence of cervical cancer in the age group 20-29 years old is manifested with a quick increase in risk up to the peaking ages between 50 and 60 years old.[6]

It is noteworthy that the new Brazilian guidelines for the screening of cervical cancer recommend starting Pap smear collection at 25 years of age for women who have had sexual activity. The tests should follow up to 64 years of age and be interrupted when, at that age, the woman had at least two consecutive negative tests over the past five years.[12] The data show that 94 (60.6%) of the studied women make up the target population in the program because they belong to the age range recommended for screening.

The education profile of the sample is consistent with that obtained in the Brazilian prison population in the last two years. By 2013, 40.7% of inmates in Ceará had not finished middle school.[1] The low educational level negatively impacts employment opportunities, increasing poverty and the practice of underemployment. It is noteworthy that low educational level associated with low professional qualification may be a contributing factor to the increase in female crime.[13]

The risk of women to be affected by cervical cancer increases among those who have low educational and socioeconomic level. The high percentage of women with little education can exacerbate individual and collective vulnerabilities, composing a social risk factor for the development of cervical cancer.[6] The individual vulnerability involves both the cognitive behavioral dimension and that of access to information. Thus, these people may have been deprived of many opportunities for knowledge and guidance available in the school environment, in academic and humanistic aspects.

Furthermore, the financial condition of the participants also represented an unfavorable social aspect for health promotion. The low income associated with a diet low in some micronutrients, especially vitamin C, beta carotene, and folate can collaborate in the carcinogenesis process. Some antioxidant nutrients, such as vitamins A, E, and C, can inhibit the formation of free radicals and the development of malignant lesions on the cervix epithelium, acting as immune response modulators against the persistence of HPV infection, preventing the progression of cervical intraepithelial neoplasias and, consequently, the development of cervical cancer. A healthy diet prevents a neoplastic development in 40%.[14]

In addition to low educational and economic level, being single, as previously observed, can exacerbate the vulnerability to STD/HIV and cervical cancer because of the possibility of a wider variety of sexual partners. However, it is noteworthy that gender issues can hamper the decision-making power in women to adopt preventive measures and their beliefs in the partner's confidence as an illusory protection for STDs.Among people who have stable partnerships, the cases of these diseases in women with fixed partnerships have raised. Thus, regardless of marital status, and number and stability of sexual partners the use of condoms in all relationships is essential to prevent sexually transmitted infections, break the epidemiological chain, and thus to become the primary prevention of cancer.[12]

Risks related to sexuality, reproduction, and smoking

The data presented show a significant percentage of early age at the first sexual intercourse, especially when compared to data in the Brazilian population of 15-64 years old. According to their findings, only 17% of sexually active women, between 15 and 64 years old, began their sexual life before age 15, while in the present study, 71 (45.8%) experienced the first sexual intercourse in this same age group and 148 (95.5%) before 19 years old.[15]

The precocity of sexual relations is directly related to increased risk of cervical cancer because of the immaturity of the cervix in adolescence, intense metaplasia, cervical transformation zone located on the ectocervix, and destabilized hormone levels. The cervical transformation zone is the most proliferating during puberty and adolescence, and is highly susceptible to changes induced by sexually transmitted agents such as HPV.[16] This information indicates that strategies to promote sexually and reproductive health should address adolescence intensively because they can be decisive determinants in the resolution of the gynecological and obstetric history in these youngsters.

Despite the earliness of the onset of sexual activity, the quantitative analysis of partners was positive because it showed the low variety and more stable relationships. However, this fact cannot be guaranteed by the partner, who may provide additional vulnerability to these women. Furthermore, the practice of prostitution was present in almost 35% of the studied female inmates.

The presence of multiple partners without the use of preventive measures also composes a predisposing factor for cervical cancer because it generates an increase in STDs, including HPV. A study on risk factors associated with cellular changes induced by HPV concluded that more than half of women with cellular alterations reported having three or more sexual partners in the last one year. This association was statistically significant and, regardless of other studied factors, it confirms the idea that more than one sexual partner is increasing the possibility of acquiring STDs.[16] For the studied women and their sexual partners, beyond the risks of not using condoms in intimate visits, the risks of not adopting extramarital relations within prisons, both by women and men who are also imprisoned, and outside institutions by those who are free are undeniable.

The common practice of homosexuality without the use of preventive methods for STD/HIV further aggravates the situation of the vulnerability of inmate women. In the institution, the distribution of condoms is prioritized for those in heterosexual conjugal visits. There is no guaranteed right to those involved in same sex visits, favoring homosexuality within the prison environment, without including this reality in preventive health measures.

The practice of using male or female condoms by only 31 (20%) inmates portrayed the fragility of actions that encourage their use. The PNSSP expects actions geared to diagnostic, counseling, and treatment of STD/HIV/AIDS, condom distribution to inmates, and the development of educational and instructional material. It is noteworthy that providing condoms to 100% of prisoners and 60% of prison servers is one of the PNSSP goals.[4] However, many of these actions are still going through difficulties and institutional barriers before becoming practice.

In a retrospective study conducted in Patos de Minas, Minas Gerais, the PAP TEST records of 2,837 women aged 14-75 years old were assessed. Based on the main findings, it was inferred that patients whose sexual partners used condoms showed less frequently of cell alterations induced by HPV, suggesting a protective factor that is independent of other variables. Still on this study, the association in the multivariate analysis showed that having three or more sexual partners in the last one year amounted to an aggression factor and the use of condom to a protection factor; these were the only independent factors associated with cytological alterations.[17]

Pregnancy is also configured as a predisposing factor for HPV infection, in part due to a decreased cellular immunity and modification of steroid hormone levels, a clinically proven fact by the regression of lesions in the postpartum. In addition, the gestational period generates an imbalance in the vaginal flora, favoring the development of both HPV and other infectious agents. The combination of all these factors leads to increased HPV lesions induced during the gestational period.[18] In the sample in question, 125 (80.6%) have experienced pregnancy, and about 40% had three or more children.

About the gynecological monitoring the prison institution, the service has one equipped office where one gynecologist and one nurse providing assistance. Women are submitted to preventive examinations in the early months of prison stay, and all the information is recorded in the medical record of each inmate, which are used for follow-ups. Prescribed medications are available in the service itself.

The gynecological monitoring in prisons gains more connotation beyond the completion of the preventive exam. In view of the inherent vulnerabilities of the female prison population, the consultation can become an important moment for advising, guiding, and providing condoms in addition to the identification of health related issues. Actions that promote sexually and reproductive health of female prisoners should not be restricted to gynecological consultations and distribution of condoms. Institutional spaces such as schools, workplaces, recreational area, and the cells themselves, should be better used by nurses to develop educational groups backed on the construction of knowledge in a participatory, dialogic, and procedural way.

The last variable evaluated, smoking, is another risk factor. The percentage found of 67.1% smokers corresponds to more than twice the percentage reported in Fortaleza, Ceará, which identified 33% of smokers.[19] Smoking significantly decreases the amount and function of Langerhans cells, which are responsible for defense mechanisms in the epithelial tissue. In addition, cigarettes contain more than 300 cancerogenous substances.[16] This high percentage of smokers represents a serious situation, considering the dangers of smoking not only as a cancer precursor but also causing other health problems.

CONCLUSION

Considering the first studied social determinants, it appears that the sociodemographic factors revealed a majority of young, single, with low education and family income inmates who were especially arrested for drug trafficking. The very youth vulnerabilities articulated in the combination of bad socioeconomic conditions can catalyze pathological processes, especially cervical cancer.

The precocity of the first sexual intercourse, failure to use condoms, parity, and inefficient screenings in the prison institution composed the sexual and reproductive risks. The multiplicity of partners in the last three months was not a predisposing factor because of the stability and little variety of sexual partners in the sample. However, issues of gender that result in women's subordination in the practice of unsafe sex, lack of knowledge about the partner's freedom, his current array of partners, and the fact that they are sexually active are already important vulnerability factors in addition to their history of prostitution in more than one third of the studied sample.

Smoking habits were detected in approximately 70% of women. The lack or absence of multidisciplinary programs to combat tobacco use in communities and prisons aggravates the situation. The difficulty of quitting, in addition to being related to organic aspects is strengthened by the context of an unstructured life.

The evaluated factors indicate that these women are vulnerable to developing the studied neoplasia. The fact that a woman and her partner are both imprisoned aggravates the risk of acquiring infections, including those sexually transmitted.

Strategies for the prevention and control of cervical cancer in the prison environment, backed by the MACC, should be strengthened with the establishment of the provisions set out in the PNSSP in order to encompass the complexity of factors involved in the trajectory of life of prisoners, and in the current prison situation.

Finally, the development of studies to estimate risks of developing cervical cancer or acquiring HPV in inmate women is suggested. The brief contact between researchers and inmates is among the limitations of this study. The long-term planning to improve the attention to the prevention of cervical cancer, including the offer of screening tests, is imperative.

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