



INCIDENCE OF SYPHILIS IN THE POPULATION THE THE MALE PRISON SYSTEM BETWEEN 2000 AND 2024: AN INTEGRATIVE LITERATURE REVIEW STUDY.

INCIDENCE OF SYPHILIS IN THE MALE PRISON POPULATION FROM 2000 TO 2024: AN INTEGRATIVE LITERATURE REVIEW.

Alexandre Gonçalves dos Santos Dias- UNINASSAU Mauritius of Nassau University Center

Therese Cicera Teodora Viana - UNINASSAU Mauritius of Nassau University Center

SUMMARY

This study analyzed the incidence of syphilis in the male prison population in Brazil between 2000 and 2024, highlighting that syphilis, caused by *Treponema pallidum*, is a Sexually Transmitted Infection (STI) with high prevalence in this vulnerable group, due to poor hygiene conditions and limited access to health services. An integrative review of the literature was carried out, including eight articles, with inclusion criteria of studies published between 2000 and 2024 that specifically addressed syphilis in the male prison population. Articles that dealt with other STIs without a direct relationship and studies with inadequate methodologies were excluded. The search was carried out in the PubMed, BVS, MedLine and Scielo databases, using descriptors such as "syphilis", "prison population" and "Sexually Transmitted Infections (STIs)". The results show a high incidence of syphilis, exacerbated by risky practices such as unprotected sex and sharing of syringes, as well as the lack of adequate health policies. The study highlights the urgency of effective interventions, including systematic screening and health education, to control the spread of the disease and improve the quality of life of inmates. These measures are essential not only for the health of prisoners, but also to prevent the spread of syphilis to the external population.

Keywords: Syphilis in the prison population. Sexually transmitted infections in prisons. Public health and the prison system

ABSTRACT

This study analyzed the incidence of syphilis among the male prison population in Brazil from 2000 to 2024. It emphasizes that syphilis, caused by *Treponema pallidum*, is a Sexually Transmitted Infection (STI) with high prevalence in this vulnerable group, primarily due to poor hygiene conditions and limited access to healthcare services. An integrative literature review was conducted, including eight articles that met the inclusion criteria of studies published between 2000 and 2024 specifically addressing syphilis in the male prison population. Articles focusing on other STIs without direct relevance and studies with inadequate methodologies were excluded. The search was performed in the databases PubMed, VHL, MedLine, and Scielo, using descriptors such as "syphilis," "prison population," and "Sexually Transmitted Infections (STIs)." The findings indicate a high incidence of syphilis, exacerbated by risk practices such as unprotected sex and the sharing of syringes, along with the absence of adequate health policies. The study highlights the urgent need for effective interventions, including systematic screening and health education, to control the spread of the disease and improve the quality of life for inmates. These measures are essential not only for the health of prisoners but also for preventing the transmission of syphilis to the broader population.

Keywords: Syphilis in the prison population. Sexually transmitted infections in prisons. Public health and the prison system.

1. INTRODUCTION

1

Sexually transmitted infections (STIs) represent a serious global public health problem, with syphilis being one of the most prevalent and having the greatest impact on several vulnerable populations. Caused by the bacterium *Treponema pallidum*, syphilis has different clinical stages (primary, secondary, latent and tertiary) which, if not treated properly, can lead to serious complications, such as cardiovascular and neurological injuries and even death (MINISTRY OF HEALTH, 2024).

Despite advances in diagnosis and treatment, this infection remains highly prevalent in marginalized groups, such as the prison population, where living conditions favor its spread.

(NASCIMENTO et al., 2022).

The prison system, especially in Brazil, is characterized by a series of structural and sanitary problems that contribute significantly to the high incidence of syphilis. With a predominantly male prison population, composed mostly of young people with low income and education, the prison environment offers conditions conducive to the spread of STIs. Overcrowding, poor hygiene and limited access to health services make it difficult to control infectious diseases, creating a cycle of contamination that affects both inmates and the general population, through intimate visits and social reintegration after serving their sentences (JOB NETO, 2019).

In addition to inadequate sanitary conditions, the social dynamics within prisons also contribute to the increased incidence of syphilis. The lack of systematic screening and sexual health education programs hinders early diagnosis and appropriate treatment. Many prisoners, out of fear of stigma or lack of knowledge, do not seek treatment, perpetuating the transmission of the disease. In addition, the practice of risky behaviors, such as sharing syringes, improvised tattoos and unprotected sexual intercourse, makes the prison environment a highly vulnerable place for the transmission of STIs, including syphilis (JOB NETO, 2019).

Historically, STIs, including syphilis, have been largely neglected in prison populations due to the social invisibility of these groups and the lack of effective public policies for control and prevention. However, studies indicate that syphilis control in this context is possible through effective interventions, such as systematic screening, health education, and access to appropriate treatments (GASPAR et al., 2021). The World Health Organization (WHO) recognizes syphilis as one of the diseases that require urgent intervention, particularly in populations at higher risk, such as men deprived of liberty (TAYLOR et al., 2022).

In Brazil, the right to health is constitutionally guaranteed to the entire population, including prisoners, as provided for in the Penal Enforcement Act (Law No. 7,210/1984). However, the reality inside prisons reveals a significant disparity in access to health care. The absence of effective prevention policies and the lack of adequate infrastructure aggravate the situation, increasing the incidence rate of syphilis among inmates (SOARES et al., 2019). This scenario requires an urgent and multidisciplinary approach, which involves not only screening and treatment of infected individuals, but also sexual education and improving the structural conditions of prisons.

Given this scenario, this study proposed a detailed analysis of the incidence of syphilis in the male prison population in Brazil between 2000 and 2024, through an integrative literature review, with the aim of identifying trends, risk factors, and implications for public health. It offered recommendations for the implementation of effective policies and intervention strategies that can minimize the spread of the disease and improve the quality of life of inmates. In addition, the study sought to contribute to the discussion on health conditions in prisons, highlighting the importance of coordinated actions between public health managers, professionals in the prison system, and civil society to address this issue.

2. THEORETICAL FRAMEWORK

2.1 Syphilis: Clinical and Epidemiological Aspects

Syphilis is a Sexually Transmitted Infection (STI) caused by the bacteria *Treponema pallidum*, a helical-shaped spirochete, whose transmission occurs predominantly sexually, but can also occur vertically, from mother to child, during pregnancy or childbirth, and through blood transfusions (GASPAR et al., 2021). Its clinical evolution is characterized by four stages: primary, secondary, latent

2

and tertiary. Each stage presents different clinical manifestations and different degrees of transmissibility. In the primary stage, the disease manifests itself with the appearance of a painless lesion (chancre) at the site of infection, usually in the genitals. This lesion may go unnoticed, especially in less visible areas, leading to lack of treatment and progression of the disease to subsequent stages (LAFOND; LUKEHART, 2006). The secondary stage occurs approximately three months after the initial infection and is characterized by systemic symptoms such as fever, muscle pain and skin rashes. The rash, often maculopapular, is a distinctive feature of this stage and is one of the main manifestations of the disease (BAUGHN; MUSER, 2005).

Latent syphilis is marked by the absence of visible symptoms, but the bacteria remain active in the body,

and can be transmitted, especially during the first two years after infection (FREITAS et al., 2021). The tertiary stage is the most serious and occurs years after the initial infection, and can cause irreversible complications, such as neurological and cardiovascular injuries and even death, if left untreated (MINISTRY OF HEALTH, 2024).

In Brazil, syphilis has shown a worrying increase in cases in recent years, being recognized as an epidemic in certain regions. This increase is related to factors such as inadequate condom use, late diagnosis, and the lack of effective public prevention and control policies. In the prison population, these factors are amplified by the precarious conditions of prisons, making the disease a public health challenge (JR; NOVAES, 2022).

2.2 Syphilis as a Public Health Problem in the Prison System

The male prison population is considered a highly vulnerable group for the acquisition and transmission of STIs, including syphilis. Confinement in overcrowded environments, without minimum hygiene conditions and with limited access to health services, creates a scenario conducive to the spread of infectious diseases (MACHADO; GUIMARÃES, 2014). Additionally, common practices in the prison environment, such as tattoos with improvised materials and the shared use of syringes, contribute to the spread of syphilis and other blood-borne infections (CICCARESE et al., 2020) risky behaviours and STIs level of knowledge in male inmates of the Casa Circondariale-Genova Marassi, the main penitentiary in Genoa, Italy. Between January and June 2019, 662 inmate medical records were retrospectively examined to obtain clinical and laboratory data about STIs. To investigate the inmate level of knowledge of STIs and their risky behaviors, 111 consenting participants answered, anonymously, a written questionnaire. One hundred and twenty-two patients had at least one infectious disease when entered the prison: HIV (1.8%).

In addition to environmental conditions, the social stigma associated with STIs makes it even more difficult to control syphilis among inmates. Many prisoners avoid seeking medical care for fear of being discriminated against or marginalized. The lack of health education programs within prisons, combined with the shortage of health professionals, makes it difficult to implement effective prevention, diagnosis, and treatment strategies (JOB NETO, 2019).

Studies indicate that the prevalence of syphilis among inmates is significantly higher than in the general population, which highlights the need for a specific and continuous approach to control the disease in this group (CASTILLO-LABORDE et al., 2021). Furthermore, the confinement of individuals does not prevent the spread of the disease outside prison walls, since many inmates maintain contact with the outside world, either through intimate visits or after their reintegration into society (JR, 2022).

2.3 Control Policies and Strategies

The World Health Organization (WHO) recognizes syphilis as one of the priority diseases for global control, especially in at-risk populations, such as the prison population (WHO, 2021). In Brazil, the Ministry of Health has implemented several strategies to control syphilis, including expanding access to rapid testing and free treatment with benzathine penicillin, a drug that is effective in eliminating the infection. However, these efforts have been insufficient to contain the increase in cases, particularly in marginalized populations (MINISTRY OF HEALTH, 2024).

In prison settings, syphilis control depends on the implementation of systematic screening programs, which include testing all inmates upon admission and at regular intervals during their sentence. In addition, health education, with a focus on STI prevention, is essential to reduce disease transmission. Including condoms and ensuring access to regular medical consultations are essential interventions for reducing the incidence of syphilis in prisons (SOARES et al., 2019).

To ensure the success of these interventions, prison system managers must commit to working with health authorities to ensure that all inmates have access to necessary care. The work of health professionals within prisons is crucial, and they must be properly trained to deal with the specificities of this population. In addition, improving sanitary conditions in prisons, by reducing overcrowding and ensuring basic hygiene, is essential for controlling infections such as syphilis (NASCIMENTO et al., 2022).

3. MATERIAL AND METHOD

3.1 Search Type

This study is characterized as an integrative literature review, which is a research method used to synthesize scientific knowledge on a given topic, allowing the analysis of relevant studies for a broader understanding of the phenomenon investigated. The integrative review was chosen because it allows a comprehensive view of the incidence of syphilis in the male prison population between the years 2000 and 2024, allowing the identification of trends, risk factors and interventions already applied to combat the disease.

3.2 Inclusion and Exclusion Criteria

Articles that addressed the incidence of syphilis in the male prison population between 2000 and 2024 were selected, focusing on studies published in the main scientific databases, such as PubMed, BVS (Virtual Health Library), MedLine and Scielo. In addition, publications from official health agencies, such as the Brazilian Ministry of Health, the Centers for Disease Control and Prevention (CDC) and the World Health Organization (WHO), were included.

Inclusion Criteria:

- Articles published between 2000 and 2024 that discuss syphilis in the male prison population.
- Studies in English and Portuguese with free access and available in full.
- Original studies with clear methodology and focus on the prison population.

Exclusion Criteria:

- Studies dealing with other Sexually Transmitted Infections (STIs) without a direct relationship with syphilis.
- Review and duplicate articles.
- Publications with little detailed methodology or sample.
-

3.3 Article Search and Selection Strategy

The search was conducted in four large databases: PubMed, BVS, MedLine and Scielo, using the descriptors "syphilis", "prison population" and "Sexually Transmitted Infections (STIs)". From these descriptors, a combination of terms was developed using Boolean operators (AND, OR) to refine the results, ensuring the selection of relevant studies.

The results obtained underwent an initial screening, in which the titles and abstracts of each article were read. Subsequently, the studies that met the inclusion criteria were selected for full reading and detailed analysis. The information extracted was organized according to the specific objectives of the research, such as the identification of risk factors, trends in the incidence of syphilis and public policies aimed at this issue.

3.4 Data Analysis

After selecting the articles, the data were analyzed descriptively, grouping the main findings of the studies in relation to the incidence of syphilis, associated risk factors, barriers to access to treatment and preventive measures already implemented. The information was discussed in comparison with the objectives of the study, seeking to identify points of convergence and divergence in the results of the reviewed articles.

4

Data analysis was based on qualitative analysis, focusing on social, economic and health factors that impact the health of the prison population, as well as implications for public health in Brazil.

Recommendations were identified based on the evidence found, with an emphasis on the implementation of preventive and diagnostic measures within prisons, as indicated in the literature.

3. RESULTS AND DISCUSSION

4.1 Incidence of Syphilis in the Male Prison Population

The studies reviewed indicate a high incidence of syphilis in the male prison population, both in Brazil and in other countries, as one of the main public health problems within the prison system. The literature shows that incarceration conditions, such as overcrowding, poor hygiene and limited access to health services, are factors that significantly contribute to the spread of the disease (MACHADO; GUIMARÃES, 2014). According to data from the Ministry of Health (2024), syphilis rates among inmates are consistently higher than in the general population, confirming the vulnerability of this population.

4.2 Risk Factors Associated with Syphilis

Risk factors identified in the reviewed articles include unprotected sexual intercourse, shared use of needles and tattooing materials, and injectable drug use, which are common practices in prison settings. In addition, the lack of sex education and social stigma related to STIs hinder early diagnosis and adequate treatment, which aggravates the spread of the disease (CICCARESE et al., 2020). Studies show that the lack of awareness programs on prevention and the unpreparedness of health professionals to deal with prison health aggravate the situation.

Another important factor is conjugal visits, which, although guaranteed by law, represent a route of transmission of syphilis outside prisons. This aspect reinforces the need for adequate control and prevention within the prison environment, since the spread of the disease is not limited to inmates, but can also affect the general population (JR, 2022).

4.3 Public Policies and Prevention Actions

The reviewed studies highlight that, although syphilis is an easily diagnosed and treated disease, prevention and control actions are still insufficient in prison systems. Health programs aimed at the prison population, such as mass testing campaigns, access to condoms and early treatment, have not been adequately implemented, which perpetuates the high incidence of the disease (NASCIMENTO et al., 2022).

The lack of public policies specifically targeting the prison environment was one of the most common points in the studies. Many authors point out that government initiatives, although important, are not implemented effectively in prisons due to the lack of resources, infrastructure and training of health professionals. Regular testing programs and educational campaigns are essential to reduce transmission and improve disease management in this population group.

4.4 Comparison with International Studies

International literature presents data similar to those found in Brazil, with high rates of syphilis in prison populations in different countries. Studies carried out in countries in Latin America, Africa, and Asia reinforce that the same risk factors — overcrowding, risky sexual practices, and lack of adequate medical care — are predominant, which makes syphilis a prevalent disease in prison systems around the world (CASTILLO-LABORDE et al., 2021).

However, in some countries, the implementation of specific prison health policies, such as in Norway and Canada, has significantly reduced the incidence of syphilis. These countries have invested in adequate health structures, frequent screenings, and health education, highlighting the importance of effective health policies for reducing STIs in prison settings (KOUYOUMDJIAN et al., 2016; NESSET et al., 2011).

5

4.5 Limitations of the Studies

One point worth highlighting is the scarcity of recent data on syphilis in the prison system. Brazilian. Although most studies review significant data up to the early 2010s, there is a gap in more recent studies that evaluate the effectiveness of measures adopted in recent years. In addition, many studies are descriptive in nature, without robust statistical details, which limits the generalization of the findings.

4.6 Intervention Proposals

Based on the evidence found, it is recommended that public policies be implemented to prevent and control syphilis in prisons. This includes:

- Regular testing and immediate treatment of confirmed cases.
- Educational campaigns aimed at inmates and health professionals.
- Access to condoms and other preventive measures, such as the use of disposable syringes in activities of risk.
- Training prison health teams, ensuring that these measures are implemented effectively and comprehensively.

Such actions are essential to reduce the incidence of syphilis not only within prisons, but also to prevent its spread to the external population.

FINAL CONSIDERATIONS

Syphilis is a sexually transmitted infection (STI) that, although controllable through early diagnosis and appropriate treatment, remains a serious public health problem in the prison system. This study reviewed the literature on the incidence of syphilis in the male prison population between 2000 and 2024, highlighting factors that favor the spread of the disease, such as poor prison conditions, risky sexual practices, and limited access to health care.

The literature review demonstrated that the prison population presents significant vulnerabilities, mainly due to overcrowding, poor hygiene, absence of prevention programs, and the stigma associated with STIs. These factors contribute to the spread of syphilis among inmates, with consequences for public health as a whole, since inmates maintain contact with society through intimate visits and after their release.

In Brazil, public policies aimed at controlling syphilis in prisons are still insufficient. There is an urgent need for effective interventions, such as regular testing programs, condom distribution, and health education for inmates. It is also essential to train health professionals working in the prison system, ensuring comprehensive health care for this population.

Internationally, countries that have implemented health policies specifically aimed at the prison environment, such as Norway and Canada, have achieved significant success in reducing the incidence of syphilis and other STIs. These examples reinforce the importance of coordinated and well-structured measures, adapted to the reality of the Brazilian prison system.

Therefore, the results of this study reinforce the need for effective and specific public health policies for the prison population. The implementation of preventive and educational strategies is essential not only to control syphilis within prisons, but also to reduce the spread of the disease to the general population, promoting a broader public health and human rights approach.

REFERENCES

BAUGHN, RE; MUSER, DM Secondary syphilitic lesions. **Clinical Microbiology Reviews**, v. 18, no. 1, p. 205–216, Jan. 2005.

CASTILLO-LABORDE, C. et al. Modeling cost-effectiveness of syphilis detection strategies in prisoners: exploratory exercise in a Chilean male prison. **Cost Effectiveness and Resource Allocation: C/E**, v. 19, n. 1, p. 5, Jan 23, 2021.

6

CICCARESE, G. et al. Sexually transmitted infections in male prison inmates. Prevalence, level of knowledge and risky behaviors. **Infections in Medicine**, v. 28, no. 3, p. 384–391, 1 Sept. 2020.

FREITAS, FLS et al. Brazilian Protocol for Sexually Transmitted Infections 2020: acquired syphilis. **Epidemiology and Health Services**, v. 30, p. e2020616, 15 Mar. 2021.

GASPAR, PC et al. Brazilian Protocol for Sexually Transmitted Infections 2020: diagnostic tests



Sexually Transmitted Infections - STI. Available at: <<https://www.gov.br/saude/pt-br/assuntos/saude-de-aaz/i/ist/ist>>. Accessed on: October 7, 2024.

JOB NETO, F. Infectious diseases in the prison system: data from health information systems and the prison system. May 6, 2019.

JR, ANR Persistence of syphilis as a challenge for the Brazilian public health: the solution is to strengthen SUS in defense of democracy and life. **Public Health Notebooks**, v. 38, n. 5, May 16, 2022.

JR, R.; NOVAES, A. Persistence of syphilis as a challenge for public health in Brazil: the way forward is to strengthen the SUS, in defense of democracy and life. **Public Health Notebooks**, v. 38, p. PT069022, May 16, 2022.

KOUYOUMDJIAN, F. et al. Health status of prisoners in Canada. **Canadian Family Physician**, v. 62, n. 3, p. 215–222, Mar. 2016.

LAFOND, RE; LUKEHART, SA Biological basis for syphilis. **Clinical Microbiology Reviews**, v. 19, no. 1, p. 29–49, Jan. 2006.

MACHADO, NO; GUIMARÃES, IS The reality of the Brazilian Prison System and the Principle of Human Dignity. v. 5, 2014.

NASCIMENTO, VA DO et al. Strategies for prevention and control of syphilis in the prison population: integrative review. **Electronic Nursing Journal**, v. 24, p. 68811–68811, 21 Nov. 2022.

NESSET, MB et al. Health care helps seeking behavior among prisoners in Norway. **BMC Health Services Research**, v. 11, no. 1, p. 301, 4 nov. 2011.

SOARES, SC DE L. et al. Syphilis in private liberty in one prison unit inside Rondônia. **Brazilian Journal of Health Review**, v. 2, n. 3, p. 2195–2205, 29 Mar. 2019.

TAYLOR, MM et al. Assessment of country implementation of the WHO global health sector strategy on sexually transmitted infections (2016-2021). **PloS One**, v. 17, no. 5, p. e0263550, 2022.