



## THE PERSISTENCE OF SYPHILIS AS A CHALLENGE FACED BY 21ST CENTURY HEALTH PROFESSIONALS

### THE PERSISTENCE OF SYPHILIS AS A CHALLENGE FACED BY HEALTH PROFESSIONALS IN THE 21ST CENTURY

Cristiano Nascimento Siqueira – Inter-American Faculty of Social Sciences – FICS<sub>1</sub>

Mayara Patrícia Nascimento Ferreira – Inter-American Faculty of Social Sciences – FICS<sub>two</sub>

Ariany Thauan Pereira de Olanda – Inter-American Faculty of Social Sciences – FICS<sub>3</sub>

Laura Elizabeth Gomes Amaral – Inter-American Faculty of Social Sciences – FICS<sub>4</sub>

Arlindo Trindade Soares Neto – Inter-American Faculty of Social Sciences – FICS<sub>5</sub>

#### SUMMARY

This research project aims to investigate the persistence of syphilis as a challenge faced by healthcare professionals in the 21st century. Syphilis remains a global public health concern, with significant impacts on morbidity and mortality, especially in developing countries. To understand the complexity of this challenge, a comprehensive review of the available scientific literature was carried out, using recognized databases such as PubMed and Scopus. The selection of articles will be based on predefined criteria, including specific search terms related to syphilis, epidemiology, diagnosis, treatment and prevention. Data analysis will be conducted using quantitative methods, including the synthesis of evidence from different studies and the analysis of temporal trends in the incidence of syphilis. This multifaceted approach will provide a more comprehensive understanding of the problem. The methodology adopted in this project follows strict methodological guidelines, including critical assessment of the quality of studies included in the literature review and triangulation of data from multiple sources. According to studies by Santos et al. (2021), the systematic literature review is an essential tool for identifying gaps in knowledge and guiding future research in the area of sexual health. Furthermore, the qualitative and quantitative analyzes of the data, as highlighted by Lima et al. (2023), provide valuable insights to understand the challenges faced by healthcare professionals in managing syphilis. These methodological practices are essential to guarantee the validity and reliability of the results, as highlighted by Oliveira et al. (2024) in their study on public health research methods. This research project aims to contribute to a better understanding of the persistence of syphilis and provide valuable insights to guide health policies and clinical practices aimed at controlling and preventing this disease.

**Keywords:** Syphilis. Health professionals. Persistence

#### ABSTRACT

This research project aims to investigate the persistence of syphilis as a challenge faced by healthcare professionals in the 21st century. Syphilis remains a global public health concern, with significant impacts on morbidity and mortality, especially in developing countries. To understand the complexity of this challenge, a comprehensive review of available scientific literature was conducted, using recognized databases such as PubMed and Scopus. The selection of articles will be based on predefined criteria, including specific search terms related to syphilis, epidemiology, diagnosis, treatment, and prevention. Data analysis will be conducted using quantitative methods, including the synthesis of evidence from different studies and the analysis of temporal trends in syphilis incidence. This multifaceted approach will provide a more comprehensive understanding of the problem. The methodology adopted in this project follows rigorous methodological guidelines, including the critical evaluation of the quality of studies included in the literature review and the triangulation

1

tion of data from multiple sources. According to the studies by Santos et al. (2021), systematic literature review is an essential tool for identifying gaps in knowledge and guiding future research in the field of sexual health. Additionally, qualitative and quantitative data analysis, as highlighted by Lima et al. (2023), provides valuable insights into understanding the challenges faced by healthcare professionals in managing syphilis. These methodological practices are essential to ensure the validity and reliability of the results, as emphasized by Oliveira et al. (2024) in their study on research methods in public health. This research project aims to contribute to a better understanding of the persistence of syphilis and provide valuable insights to guide health policies and clinical practices aimed at controlling and preventing this disease.

## 1. INTRODUCTION

In the context of the 21st century, addressing public health challenges continues to be a priority for health professionals around the world. Among these challenges remains syphilis, a sexually transmitted infectious disease that has plagued humanity for centuries. Despite medical and technological advances, syphilis maintains its relevance and complexity, representing a global public health problem. From this perspective, this analysis seeks to explore the persistence of syphilis as a contemporary challenge faced by healthcare professionals in the 21st century.

Syphilis is a bacterial infection caused by the bacterium *Treponema pallidum*, transmitted mainly through unprotected sexual contact. Although it is a treatable disease and, in many cases, curable with antibiotics, its persistence and resurgence in several parts of the world have raised significant concerns. Health professionals are faced with a series of obstacles in effectively combating this disease, including late diagnosis, antibiotic resistance, social stigma, among others.

The persistence of syphilis from different perspectives, from clinical and epidemiological challenges to associated social and public health issues. In addition, strategies and interventions that health professionals can adopt to mitigate the impacts of syphilis and promote the health of the population will be discussed.

Ultimately, the article sought to contribute to a deeper understanding of syphilis as a constantly evolving challenge for healthcare professionals in the 21st century, providing relevant insights for public health policies, clinical practices and future research in the area.

## 2 THEORETICAL FRAMEWORK

Syphilis, a sexually transmitted disease caused by the bacterium *Treponema pallidum*, continues to be a challenge for healthcare professionals in the 21st century (Silva, 2020). Its persistent impact on public health requires a comprehensive understanding of its causes and consequences.

Syphilis is a sexually transmitted disease (STD) caused by the bacteria *Treponema pallidum*. Its epidemiology has varied over the years and is influenced by factors such as sexual behavior, access to health services and prevention measures. In recent years, there has been a worrying increase in cases of syphilis in various parts of the world, including in developed countries. This is attributed to a combination of factors, including decreased condom use, an increase in risky behaviors such as unprotected sex, and challenges in early detection and adequate treatment of the disease.

The incidence of syphilis has shown a worrying increase in many regions of the world, representing an ongoing challenge for health systems (Johnson, 2021). Understanding the epidemiology of syphilis is crucial for developing effective prevention and control strategies.

Syphilis has a complex epidemiology, affecting people of all ages, genders and socioeconomic groups. However, certain groups are more vulnerable to contracting the disease, such as men who have sex with men (MSM), people who inject drugs, sex workers and individuals with limited access to health services. Furthermore, syphilis is more prevalent in urban areas and in communities with a high incidence of other STDs, as well as in places with weak health systems.

Syphilis is transmitted mainly through unprotected sexual contact and can be transmitted from mother to fetus during pregnancy (Gomes, 2022). Knowledge about the modes of transmission and associated risk factors is essential for preventing the disease.

Syphilis has a significant impact on public health due to its complications if not treated properly. It can cause a wide range of health problems, from skin lesions to damage serious damage to internal organs, such as the heart and brain. Additionally, untreated syphilis during pregnancy it can lead to serious complications for the fetus, including miscarriage, stillbirth, congenital malformations and even neonatal death. Therefore, prevention, early detection and effective treatment of syphilis are essential to reduce its global disease burden.

Efforts to control syphilis include public education about prevention, promotion of condom use, regular screening in high-risk groups, and easier access to health services for diagnosis and treatment. However, there are significant challenges to effectively implementing these measures, including stigma surrounding STIs, barriers to accessing healthcare, and lack of resources in many regions. Therefore, addressing the epidemiology of syphilis requires a multifaceted approach that

involves collaboration between governments, health organizations, health professionals and civil society to promote awareness, reduce stigma and improve access to prevention, testing and treatment services.

### Clinical manifestations of syphilis

Syphilis is a disease known for its diverse clinical manifestations, which can develop at different stages of the infection. In the primary stage, usually a few weeks after exposure to the bacteria *Treponema pallidum*, a painless sore appears in the genital, anal or oral area, known as a hard chancre. This characteristic sign often goes unnoticed, which can result in late diagnosis. In the secondary stage, which occurs a few weeks to months after the chancre appears, symptoms may include skin rashes, mucosal lesions, fever, general malaise and lymphadenopathy.

Syphilis can present a variety of clinical manifestations, including skin lesions, secondary and tertiary syphilis, and serious complications such as neurosyphilis (Martins, 2023). Early recognition of symptoms is essential for proper diagnosis and treatment.

As syphilis progresses to the latent stage, symptoms usually disappear, but the infection persists in the body. This stage can last for years, during which the disease remains asymptomatic in most cases. However, if left untreated, syphilis can progress to the tertiary stage, which is characterized by serious complications such as damage to internal organs, the central nervous system and the cardiovascular system. These complications can result in irreversible damage and even threaten the patient's life.

It is important to highlight that syphilis can present a wide range of clinical manifestations and that not all patients develop all stages of the disease. Additionally, symptoms can vary widely between individuals and mimic other medical conditions, which can make accurate diagnosis difficult. Therefore, early identification of the signs and symptoms of syphilis, along with regular screening tests in high-risk populations, is crucial for timely diagnosis and treatment, helping to prevent serious complications associated with the disease.

### Diagnosis of syphilis

The diagnosis of syphilis involves a combination of clinical history, physical examination and specific laboratory tests. The first step towards diagnosis is a thorough assessment of the patient's medical history, including information about sexual behavior, exposure to risk factors and the presence of symptoms suggestive of the disease. Physical examination may reveal signs such as skin lesions, lymphadenopathy and other clinical manifestations that raise suspicion of syphilis.

The diagnosis of syphilis involves a combination of serological and clinical tests (Oliveira, 2024). Specific laboratory tests, such as the VDRL test and the FTA-ABS test, are essential to confirm the diagnosis.

Laboratory tests play a key role in confirming the diagnosis of syphilis. The most common test is the non-treponemal test, which detects the presence of antibodies against *Treponema pallidum* in the patient's blood. Examples of these tests include the VDRL (Venereal Disease Research Laboratory) test and the RPR (Rapid Plasma Reagin) test. If the non-treponemal test result is positive, it is necessary to confirm the diagnosis with a specific treponemal test, such as the *Treponema pallidum* immobilization test (FTA-ABS) or the *T. pallidum* hemagglutination test (TPHA). These tests detect the presence of specific antibodies against *T. pallidum*, confirming the infection.

Laboratory tests, syphilis can also be diagnosed through direct examinations, such as microscopic observation of samples of suspicious lesions under a dark-field microscope or by fluorescence. However, these methods may be less sensitive and specific than serological tests and are generally reserved for cases in which laboratory tests are inconclusive or unavailable. Ultimately, accurate diagnosis of syphilis is essential for appropriate treatment of the disease and for preventing serious complications associated with untreated infection.

3

### Syphilis treatment

Syphilis treatment generally involves the use of antibiotics, with penicillin being the treatment of choice.

choice for all stages of the disease. The choice of therapeutic regimen depends on the stage of syphilis, the severity of symptoms, and other medical considerations, such as antibiotic allergies. In the primary, secondary and early latent stages, a single dose of benzathine penicillin is generally effective in eradicating the infection. In late stages of syphilis or in cases of neurosyphilis, treatment may require higher doses of penicillin administered over a longer period under medical supervision.

Penicillin remains the treatment of choice for syphilis, although antibiotic resistance is a growing concern (Lee, 2020). Alternative regimens are being explored for cases of penicillin resistance or allergy.

After treatment, it is important to monitor the patient's response to treatment through follow-up serological testing to ensure adequate resolution of the infection. In some cases, it may be necessary to repeat treatment if treatment fails or if reinfection occurs. Additionally, it is essential to offer counseling and testing to the infected patient's sexual partners, along with education about STI prevention and consistent condom use. Timely and adequate treatment of syphilis not only cures the individual infection but also helps prevent the spread of the disease and its serious complications.

### **Psychosocial impact of syphilis**

The psychosocial impact of syphilis can be significant, both for infected individuals and their interpersonal relationships. The social stigma associated with sexually transmitted diseases, including syphilis, can lead to feelings of shame, guilt and isolation. Fear of judgment from others can often stop people from seeking treatment or support, thus prolonging the infection and increasing the risk of complications. Furthermore, a diagnosis of syphilis can trigger concerns about transmitting the disease to sexual partners, leading to conflicts in relationships and communication difficulties.

The stigma associated with syphilis can have a significant impact on the mental and emotional health of affected individuals, as well as treatment adherence (Pereira, 2021). Strategies to reduce stigma and provide psychosocial support are essential for managing the disease.

The psychosocial impact of syphilis also extends to the mental health context, with reports of anxiety, depression and stress associated with the condition. Uncertainty about the course of the disease, the effects of treatment and fear of complications can contribute to patients' psychological suffering. Psychosocial support, including individualized counseling, support groups and education about the disease, plays a crucial role in coping with the emotional impact of syphilis. Promoting awareness, reducing stigma, and providing adequate support resources are essential aspects of comprehensive care for patients affected by syphilis.

### **Syphilis prevention**

Preventing syphilis is essential to reduce its incidence and impact on public health. Effective prevention strategies include promoting consistent and correct use of condoms during sexual activity, as well as reducing the number of sexual partners. Comprehensive sexuality education, which addresses both knowledge about sexually transmitted diseases and the importance of consent, is essential to empowering individuals to make informed decisions about their sexual health.

Syphilis prevention includes safe sex education, regular screening, and timely treatment of infected sexual partners (Costa, 2022). Prevention strategies must be adapted to local needs and contexts.

Furthermore, easy access to sexual health services, including screening tests for syphilis and other STIs, is essential for early detection of infection and initiation of appropriate treatment. The offer of screening tests in easily accessible locations, such as healthcare facilities, community clinics, and testing and counseling centers, can help identify cases of syphilis quickly and effectively. Syphilis prevention requires a holistic approach that combines education, access to health services and promotion of healthy sexual behaviors, aiming to reduce the transmission of the disease and its consequences for public health.

## Challenges in preventing syphilis

In the prevention of syphilis, several challenges emerge, from public awareness to the implementation of effective intervention strategies. A major obstacle lies in the lack of comprehensive and accessible sexuality education in many communities, which results in limited understanding of the risks associated with syphilis and other sexually transmitted infections (STIs). Furthermore, social, cultural and economic barriers often make access to health services and early diagnostic tests difficult, prolonging disease detection and increasing the potential for transmission. Stigmatization around STIs can also discourage individuals from seeking treatment or openly discussing their concerns with sexual partners or healthcare professionals, thus perpetuating the spread of syphilis.

Barriers such as lack of access to health services, stigma, and lack of awareness continue to hamper syphilis prevention efforts (Santos, 2023). Addressing these challenges requires an integrated and multidisciplinary approach.

To address these challenges, it is crucial to adopt integrated approaches that combine comprehensive sexual health education, awareness campaigns and accessible screening programs. This requires close collaboration between governments, non-governmental organizations, healthcare professionals and local communities to ensure that accurate information is available and that prevention, diagnostic and treatment services are accessible to everyone, regardless of their socioeconomic situation. Furthermore, it is essential to combat the stigma associated with STIs by promoting a culture of openness and support for those seeking help and treatment. By addressing these challenges comprehensively and collaboratively, we can advance syphilis prevention and improve the sexual and reproductive health of populations around the world.

## Intervention approaches in syphilis

Syphilis intervention approaches range from education and awareness to provision of medical care and systematic screening. A fundamental strategy is to educate the public about the risks associated with syphilis, including its forms of transmission, symptoms and consequences. This can be done through public health campaigns, educational materials in schools and communities, and awareness programs aimed at higher risk groups. Furthermore, it is essential to ensure universal access to sexual health services that offer early diagnostic tests, effective treatment and appropriate counseling. This includes promoting the use of condoms, which are an effective measure in preventing the transmission of syphilis and other sexually transmitted infections.

Community-based approaches, including public education, screening, and treatment, are critical to controlling the spread of syphilis (Lima, 2020). Partnerships between healthcare professionals, governments, and community organizations are essential to implementing these interventions effectively.

Another crucial approach is systematic screening for syphilis in higher-risk groups, such as pregnant women, sex workers, men who have sex with men and people living with HIV. Early diagnosis and timely treatment are essential to interrupt the disease transmission chain and prevent serious complications, such as vertical transmission from mother to baby during pregnancy. Additionally, innovative strategies, such as using digital technologies to facilitate access to health services and implementing community-based approaches, can help reach vulnerable populations who face barriers to traditional care. Taken together, these intervention approaches have the potential to significantly reduce the incidence of syphilis and improve health outcomes for affected individuals.

5

## The role of health professionals in addressing syphilis

The role of health professionals in addressing syphilis is fundamental at all stages, from prevention to treatment and monitoring of patients. Firstly, healthcare professionals play a crucial role in education and awareness about syphilis, providing accurate information about the disease's risks, symptoms and prevention methods. They are also responsible for carrying out regular screening tests on high-risk groups and ensuring that results are communicated clearly and confidentially to patients. Furthermore, healthcare professionals are on the front line in early diagnosis and effective treatment of syphilis, prescribing appropriate medications and monitoring the

response to treatment over time.

Health professionals play a crucial role in the prevention, diagnosis and treatment of syphilis (Mendes, 2024). Ongoing training and education are essential to ensure that healthcare professionals can provide quality care to patients.

Healthcare professionals play a crucial role in counseling and supporting patients diagnosed with syphilis, providing information about the importance of adherence to treatment, the need for partners to be tested and treated, and the potential effects of the disease on general and reproductive health. They may also refer patients for additional services, such as psychological support or family planning services, as needed. In short, healthcare professionals play a vital role in every facet of managing syphilis, working to prevent the spread of the disease, diagnose it early, and provide comprehensive care to affected patients.

#### **Ethical challenges in the approach to syphilis**

When addressing syphilis, healthcare professionals face a range of ethical challenges that can impact the provision of effective and compassionate care to patients. One of the main challenges is the issue of patient confidentiality and privacy. When carrying out screening tests for syphilis and disclosing the results, healthcare professionals must ensure that the information is treated with the highest degree of confidentiality, respecting the patient's right to privacy. However, this can be complicated in cases where the spread of the disease could pose a significant risk to public health, such as in cases of vertical transmission to the fetus during pregnancy.

There are important ethical challenges associated with the management of syphilis, including confidentiality, informed consent, and fairness in access to healthcare (Fernandes, 2021). It is essential to address these issues sensitively and respectfully.

Another ethical challenge arises in relation to equity in access to healthcare. In many communities, access to quality health services is unequal, with financial, geographic and cultural barriers that can prevent certain groups from receiving the treatment they need. This can result in disparities in the detection and treatment of syphilis, with negative consequences for the most vulnerable and marginalized populations. Healthcare professionals face the challenge of ensuring that all patients have equal access to healthcare services, regardless of their ethnic origin, socioeconomic status or geographic location, thus ensuring an ethical and fair approach to combating syphilis.

#### **Future perspectives in the approach to syphilis**

Future perspectives in the management of syphilis are intrinsically linked to the continued advancement of scientific research, technological innovation and global collaboration. With the advent of new, more sensitive and rapid diagnostic technologies, such as rapid tests and molecular detection methods, there is an opportunity to significantly improve the early detection of syphilis and, consequently, reduce the transmission of the disease. Furthermore, the development of new therapies and vaccines may offer more effective alternatives for the treatment and prevention of syphilis, especially in high-risk populations.

The approach to syphilis includes the development of vaccines and alternative therapies, as well as strengthening health systems to improve access to care (Gonçalves, 2020). Investments in research and health policies are needed to effectively address this challenge.

Scientific advances and future perspectives in the management of syphilis also depend on a renewed commitment to education and public awareness. Comprehensive sexuality education programs, awareness campaigns and community actions can play a crucial role in increasing sex awareness.

Understanding the risks associated with syphilis and promoting safe sexual behaviors. Furthermore, it is essential to strengthen health systems and ensure equitable access to health services, especially in marginalized communities. By addressing these challenges in a comprehensive and collaborative manner, we can envision a future where the incidence of syphilis is significantly reduced and the negative impacts of the disease are mitigated on a global scale.

6

#### **Economic impact of syphilis**

The economic impact of syphilis is significant and multifaceted, affecting not only health systems

health, but also national and individual economies. In terms of direct costs, treating syphilis and its complications can represent a substantial burden on healthcare systems, including expenses for medical consultations, laboratory tests, medications and hospital admissions. Furthermore, the indirect costs associated with lost productivity due to the disease and its sequelae can be equally impactful, especially in countries where syphilis is endemic and affects a significant portion of the economically active population.

Syphilis has a significant impact on healthcare systems and the broader economy (Sousa, 2023). The costs associated with the diagnosis, treatment and complications of syphilis highlight the importance of investments in prevention and control.

The economic impact of syphilis extends beyond the scope of health systems, also affecting individuals and their families. The costs associated with treating syphilis can place a substantial financial burden on those affected, especially those on low incomes who may have difficulty accessing health services or paying for medications. Furthermore, the long-term consequences of untreated syphilis, such as infertility, neurological complications and increased HIV risk, can have significant economic impacts in terms of additional treatment costs and lost income. In summary, the economic impact of syphilis highlights the importance of investing in effective prevention and control strategies to reduce the financial burden of the disease and promote the economic well-being of individuals and communities.

## Syphilis education and awareness

Education and awareness about syphilis plays a crucial role in prevention, early detection and effective treatment of the disease. It is essential to provide accurate information about the risks associated with syphilis, including its forms of transmission, symptoms and consequences, so that people can make informed decisions about their sexual health. This can be accomplished through public health campaigns, educational materials distributed in schools, communities and health centers, and awareness programs aimed at higher risk groups, such as pregnant women, sex workers and men who have sex with men.

Public education and awareness are key to preventing the spread of syphilis (Rodrigues, 2024). Awareness campaigns should address not only the medical aspects of the disease, but also social and behavioral issues related to prevention.

Syphilis education and awareness should include information about the importance of regular testing for the disease, especially in high-risk populations. This can help raise awareness about the need to seek medical care immediately when experiencing symptoms suggestive of syphilis or having had sexual contact with someone diagnosed with the disease. By promoting a broader understanding of syphilis and its public health implications, we can work to reduce the incidence of the disease, mitigate its negative impacts, and promote a more comprehensive culture of sexual and reproductive health.

## Impact of syphilis on maternal and child health

The impact of syphilis on maternal and child health is serious and comprehensive, affecting both pregnant women and newborns. During pregnancy, untreated syphilis can lead to serious complications such as miscarriage, stillbirth, premature birth and neonatal death. Furthermore, vertical transmission of syphilis from mother to fetus can result in congenital syphilis, a condition that can cause a range of health problems in the baby, including skin lesions, bone deformities, deafness, blindness and neurological impairment.

Vertical transmission of syphilis during pregnancy can have serious consequences for the mother and baby (Ferreira, 2021). Timely screening and treatment are essential to prevent neonatal complications.

7

such.

To avoid these devastating impacts, it is crucial that pregnant women receive adequate prenatal care, including screening for syphilis during pregnancy and immediate treatment if the test is positive. Furthermore, it is important to ensure that pregnant women's sexual partners are also tested and treated, to avoid reinfection of the mother and vertical transmission of the disease. Universal access to quality health services and education on sexual and reproductive health are fundamental to preventing the transmission of syphilis from mother to child and protecting maternal and child health.

Technology and innovation play a crucial role in the fight against syphilis, offering new tools and approaches for preventing, diagnosing and treating the disease. One area where technology has been particularly useful is in developing rapid and accurate diagnostic tests for syphilis, which can be easily implemented in different healthcare settings, including remote and resource-limited areas. Additionally, advances in telemedicine and health apps have made it easier to access information about syphilis, allowing people to learn about the disease, find nearby health services, and even conduct remote medical appointments for screening and counseling.

Advances in technology, such as rapid tests and partner tracking apps, are being explored to improve the detection and management of syphilis (Barbosa, 2022). Innovation plays an important role in improving healthcare.

Another area of innovation is research into new therapies and vaccines to prevent and treat syphilis. Advances in biotechnology and materials science have enabled the development of new drug and vaccine formulations that may be more effective and affordable for the treatment and prevention of syphilis. Furthermore, the use of artificial intelligence and big data to analyze disease transmission patterns can help healthcare professionals identify areas of greatest risk and target prevention interventions more effectively. Together, these technologies and innovations have the potential to transform the approach to syphilis, making it more accessible, efficient and comprehensive.

## Recommendations

Recommendations for combating syphilis are essential to guide effective health policies and clinical practices. First, it is crucial to promote syphilis awareness and education at all levels of society, from public health campaigns to educational programs in schools and communities. This includes disseminating information about transmission risks, symptoms, prevention methods and the importance of early diagnosis and timely treatment. Furthermore, it is essential to strengthen health systems to ensure universal access to sexual health services, including syphilis screening tests, appropriate treatment, and comprehensive counseling for affected individuals.

Syphilis persists as a complex challenge for healthcare professionals in the 21st century (Almeida, 2020). Effectively addressing syphilis requires a holistic approach that includes prevention, diagnosis, treatment and psychosocial support.

Another important recommendation is the implementation of systematic syphilis screening programs in high-risk groups, such as pregnant women, sex workers, men who have sex with men and people living with HIV. This allows for early detection of the disease and timely intervention, thereby reducing the transmission of syphilis and its associated complications. Furthermore, it is crucial to ensure appropriate treatment for patients diagnosed with syphilis, including the use of recommended antibiotics and regular follow-up to monitor response to treatment. By implementing these recommendations in a comprehensive and coordinated manner, we can advance the prevention and control of syphilis and improve health outcomes for affected individuals and their communities.

## 2. MATERIAL AND METHOD

The material and method used in this study were essential to understand the persistence of syphilis as a challenge for health professionals in the 21st century. The literature review was conducted using recognized databases, such as PubMed and Scopus, ensuring comprehensiveness and updating of information. As highlighted by Smith et al. (2020), the systematic bibliographic review is a fundamental tool to identify gaps in knowledge and guide future research in the area of sexual health.

The selection of articles was carried out according to predefined criteria, including search terms specific information related to syphilis and its epidemiological aspects, diagnosis, treatment and prevention. This rigorous methodological approach is crucial to ensure the quality and relevance of the studies included in the analysis, as highlighted by Jones et al. (2022) in their study on syphilis control strategies.

In the literature review, quantitative and qualitative analyzes of the data were carried out, including the synthesis of evidence from different studies and the analysis of temporal trends in the incidence of syphilis. That

multifaceted approach provided a more comprehensive understanding of the problem, as pointed out by Garcia et al. (2023) in their research on the challenges faced by healthcare professionals in managing syphilis.

To ensure the validity and reliability of the results, recognized methodological guidelines were adopted, such as critical assessment of the quality of included studies and triangulation of data from multiple sources. These methodological practices are essential to minimize bias and provide solid and reliable results, as emphasized by Silva and colleagues (2020) in their study on public health research methods. Taken together, the material and method used in this study provide a solid basis for understanding the persistence of syphilis and guiding effective strategies for preventing and controlling the disease.

## FINAL CONSIDERATIONS

The final considerations of this article highlight the persistence of syphilis as a significant challenge faced by healthcare professionals in the 21st century. Despite advances in medicine and the availability of effective treatments, syphilis continues to be a disease with a major global impact, affecting millions of people around the world. The persistence of syphilis reflects a number of complex factors, including a lack of public awareness about the risks associated with the disease, barriers to accessing health services, and the emergence of antibiotic-resistant strains.

Final considerations highlight the importance of integrated and multifaceted approaches to face the challenge of syphilis. This includes promoting education and awareness about the disease, implementing systematic screening programs in high-risk groups such as pregnant women and vulnerable populations, and strengthening health systems to ensure universal access to quality sexual health services. At the same time, it is essential to invest in research and innovation to develop new strategies for the prevention, diagnosis and treatment of syphilis that are effective, accessible and culturally sensitive.

Final considerations point to the need for a collaborative and coordinated approach between governments, non-governmental organizations, health professionals and affected communities to effectively address the challenge of syphilis. This requires a renewed commitment to public health and a coordinated global response to reduce the burden of disease and improve health outcomes for affected populations. Only through concerted and committed efforts can we hope to make significant progress in the fight against syphilis and ensure a healthier future for all.

## REFERENCES

ALMEIDA, HM (2020). **The persistence of syphilis as a challenge for healthcare professionals in the 21st century**. Doctoral Thesis, Federal University of São Paulo.

BARBOSA, JA (2022). Technology and innovation in the fight against syphilis: **recent advances and future perspectives**. Journal of Health Technology, 15(3), 345-358.

COSTA, AM (2023). Future perspectives in the approach to syphilis: **trends and innovations**. Revista de Saúde Pública, 49(1), 67-78.

COSTA, AS (2023). **Syphilis prevention: challenges and perspectives**. Cadernos de Saúde Pública, 39(2), 234- 247.

FERNANDES, RA (2022). **Ethical challenges in the approach to syphilis: a critical review**. Bioethics Magazine, 30(2), 201-215.

9

FERREIRA, ML (2021). **Impact of syphilis on maternal and child health: an integrative review**. Brazilian Journal of Gynecology and Obstetrics, 43(4), 567-580.

GARCIA, M. et al. (2023). **Challenges faced by healthcare professionals in the management of syphilis: a qualitative analysis**. Revista de Saúde Pública, 30(4), 567-580.

GARCIA, RS (2021). **Antibiotic resistance in syphilis: an updated review**. Journal of Infectious Di-



GOMES, EF (2022). **Clinical aspects of syphilis**. International Medical Clinic, 28(2), 45-56.

GONÇALVES, DS (2024). **Interdisciplinary collaboration in the approach to syphilis: a case analysis**. Cadernos de Saúde Coletiva, 40(3), 345-358.

JOHNSON, C. D. (2021). **Epidemiology of syphilis in the 21st century**. Public Health Magazine, 50, 1-10.

JONES, A. et al. (2022). **Syphilis control strategies: a critical review of the literature**. Journal of Infectious Diseases Research, 8(1), 45-58.

LEE, P. S. (2020). **Syphilis Treatment: A Comprehensive Review**. Journal of Antimicrobial Chemotherapy, 75(4), 102-115.

LIMA, A. et al. (2023). **Qualitative and quantitative analyzes of the challenges faced by healthcare professionals in the management of syphilis**. Journal of Public Health Research, 10(2), 134-148.

LIMA, CM (2020). **Intervention approaches in syphilis: successful experiences**. Bulletin of Epidemiology, 48(4), 432-445.

MARTINS, G.H. (2023). **Differential diagnosis of secondary syphilis**. Brazilian Journal of Dermatology, 98(3), 321-335.

MENDES, FL (2021). **Role of health professionals in addressing syphilis: perspectives and challenges**. Journal of Preventive Medicine, 55(3), 312-325.

OLIVEIRA, L.M. (2024). **Serological tests for diagnosing syphilis**. Brazilian Journal of Laboratory Medicine, 80(1), 78-89.

OLIVEIRA, R. et al. (2024). **Public health research methods: a comparative analysis**. Cadernos de Saúde Pública, 40(1), 210-225.

PEREIRA, MN (2022). **Psychosocial impact of syphilis: a multidisciplinary perspective**. Psychology in Research, 14(3), 456-468.

RODRIGUES, TF (2024). **Syphilis education and awareness: strategies and challenges**. Health Education Journal, 12(1), 45-58.

SANTOS, J. et al. (2021). **Systematic bibliographic review as a tool for identifying gaps in sexual health knowledge**. Brazilian Journal of Sexual Health, 16(3), 78-92.

SANTOS, JR (2024). **Barriers to syphilis prevention: a qualitative analysis**. Journal of Nursing and Community Health, 17(1), 56-67.

SILVA, AB (2020). **Syphilis: challenges and strategies for controlling**. Health Editor.

10

SILVA, R. et al. (2020). **Public health research methods: a comparative analysis**. Public Health Notebooks, 36(3), 210-225.

SMITH, J. et al. (2020). **Systematic bibliographic review as a tool for identifying gaps in knowledge in sexual health**. Brazilian Journal of Sexual Health, 15(2), 123-135.

SOUSA, RP (2023). **Economic impact of syphilis: a systematic review**. Journal of Public Health Economics, 20(2), 189-202.