







REVIEW ARTICLE

Strategies for syphilis prevention and control in the population deprived of liberty: integrative review

Estratégias para prevenção e controle da sífilis na população privada de liberdade: revisão integrativa

Valéria Alexandre do Nascimento¹ , Ryanne Carolynne Marques Gomes Mendes¹ ,
Vilma Costa de Macêdo¹ , Cecília Maria Farias de Queiroz Frazão¹ , Tatiane Gomes Guedes¹ ,
Francisca Márcia Pereira Linhares¹ 

ABSTRACT

Objective: to identify in the scientific literature the health strategies used for syphilis prevention and control in the population deprived of liberty. **Method:** integrative review performed in October 2021 in the following databases: Medline/PubMed; Scopus; Web of Science, Cumulative Index to Nursing and Allied Health and the Virtual Health Library. **Results:** 553 articles were identified and after applying the inclusion and exclusion criteria, 17 were selected to compose the sample. The following health strategies for syphilis prevention and control within the prison system were identified: surveillance and epidemiological analysis; educational intervention for prevention; and use of a screening and treatment protocol. **Conclusion:** the strategies identified are relevant to assess the situation of syphilis within the prison context and reduce its transmission. However, there are few educational intervention strategies to prevent syphilis among inmates.

Descriptors: Communicable Disease Control; Syphilis; Primary Prevention; Prisons.

RESUMO

Objetivo: identificar na literatura científica quais estratégias de saúde foram utilizadas para a prevenção e controle da sífilis na população privada de liberdade. **Método:** revisão integrativa realizada em outubro de 2021 nas bases de dados - *Medline/PubMed; Scopus; Web of Science, Cumulative Index to Nursing and Allied Health* e na Biblioteca Virtual em Saúde. **Resultados:** identificou-se 553 artigos e, após a aplicação dos critérios de inclusão e exclusão, foram selecionados 17 para compor a amostra. As estratégias de saúde para prevenção e controle da sífilis dentro do sistema prisional identificadas foram: vigilância e análise epidemiológica; intervenção educativa para prevenção; e uso de protocolo de rastreamento e tratamento. **Conclusão:** as estratégias identificadas são relevantes para avaliar a situação da sífilis dentro do contexto prisional e reduzir sua transmissão. Entretanto, são poucas as estratégias de intervenção educacional para prevenção da sífilis entre os apenados.

Descritores: Controle de Doenças Transmissíveis; Sífilis; Prevenção Primária; Prisões.

¹ Universidade Federal de Pernambuco (UFPE), Recife, Pernambuco, Brasil. E-mails: valeria.nascimento@ufpe.br, ryannecarolynne@gmail.com, vilmacmacedo@hotmail.com, ceciliamfqueiroz@gmail.com, tatiguedes@yahoo.com, marciapl27@gmail.com.

How to cite this article: Nascimento VA, Mendes RCMG, Macêdo VC, Frazão CMFQ, Guedes TG, Linhares FMP. Strategies for syphilis prevention and control in the population deprived of liberty: integrative review. Rev. Eletr. Enferm. [Internet]. 2022 [cited _____];24:68811. Available from: <https://doi.org/10.5216/ree.v24.68811>.

Corresponding author: Valéria Alexandre do Nascimento. E-mail: valeria.nascimento@ufpe.br.

Received: 05/01/2021. Approved: 04/12/2022. Published: 11/21/2022.

INTRODUCTION

Syphilis is an infectious disease caused by the *Treponema pallidum* bacterium. It has specific clinical manifestations depending on the stage. Transmission is usually through unprotected sexual intercourse, from the mother to the fetus (vertically), by blood transfusion or direct contact with contaminated blood⁽¹⁾.

Despite advances in early diagnosis and treatment, syphilis remains a serious public health problem worldwide, with an estimated 36 million prevalent cases and more than 12 million new cases annually. According to the World Health Organization (WHO), more than half of cases of pregnant women with active syphilis will present stillbirths, perinatal death or severe neonatal infection⁽²⁻³⁾.

The epidemiological context of syphilis in Brazil does not differ from that in other countries. Even though this is a highly preventable disease with different forms of diagnosis and effective treatment in the National Health Service (Brazilian SUS), there is a significant increase mainly in vulnerable populations, such as men who have sex with men, transgender women, sex workers and the population deprived of liberty⁽⁴⁾.

This population is inserted in the context of vulnerable behaviors, including involvement with violence, abusive use of injecting drugs and unprotected sexual practices. Although the infrastructure and conditions of prisons are different in each country, overcrowding and the lack of health actions are important factors that stand out in several of them, such as Brazil⁽⁴⁾.

In a study conducted in 12 prisons in the central region of Brazil, the lifetime prevalence of syphilis of 9.4% in men and 17% in women was found. Syphilis was active in 2% of men and 9% of women. Around 90% of people deprived of liberty interviewed reported being unaware of their serological status for Sexually Transmitted Infection (STI). The lack of information about the diagnosis and the high prevalence of syphilis contributed to the transmission among prisoners and the general population through conjugal visits or in those released from the prison system. In addition, this infection is identified as one of the risk factors that facilitates the transmission of the human immunodeficiency virus (HIV) in the same way that the HIV virus can accelerate the progression of syphilis to advanced stages⁽⁵⁾.

In this context, there was a reorientation of the care model to expand the opportunities of health access for inmates. The current problems found inside the walls of Brazilian prisons demonstrate care inefficiency, based on guidelines of the National Policy for Comprehensive Health Care for Persons Deprived of Liberty in the Prison System (Portuguese acronym: PNAISP), according to which all prison health units should function as points of the Health Care Network of the Brazilian SUS⁽⁶⁾.

In general, the strategies used for the general population at the federal, state and local levels for syphilis prevention and control are: epidemiological surveillance, continuing education of professionals, strengthening of horizontal health education actions focused on prevention, performance of exams for diagnosis, embracement and treatment of diagnosed patients and their sexual partners, as well as the support of specialized clinical services⁽⁷⁾.

High rates of syphilis are observed in the population deprived of liberty, which requires the implementation of health education actions for the prevention and control of this infection in the prison context of Brazil and worldwide.

The investigation of which strategies are being adopted for syphilis prevention and control in the population deprived of liberty will make it possible to highlight the most used in this scenario and list those that need greater priority, aiming at the qualification of health care for prevention, assistance, treatment and surveillance of syphilis. In addition, it can offer subsidies to the practice of health professionals, especially nurses, by enabling decision-making based on scientific evidence while at the same time, stimulating critical reflections related to the strategies used in this population. Therefore, the aim of the present study was to identify in the scientific literature the health strategies used for syphilis prevention and control in the population deprived of liberty.

METHOD

This is an integrative review developed in five steps: problem identification; literature search; evaluation of selected studies; analysis of results; and presentation of results⁽⁸⁾.

The research question was developed based on the PICO strategy: (P) - Population (persons deprived of liberty); (I) - Interest (health strategies); (Co) - Context (syphilis prevention and control)⁽⁹⁾. It generated the following guiding question: what is the scientific evidence available in the literature on strategies used for syphilis prevention and control in the population deprived of liberty?

The literature search was performed in October 2021 by two researchers independently in the Virtual Private Network (VPN) remote access to the Periodicals Portal of the Coordination for the Improvement of Higher Education Personnel (CAPES) in the following databases/ Portal/ Library: Medline/PubMed; Scopus; Web of Science, Cumulative Index to Nursing and Allied Health (CINAHL) and the Virtual Health Library (Portuguese acronym: BVS). Controlled descriptors and their synonyms consulted in the Health Sciences Descriptors (DeCS) and the Medical Subject Headings (MeSH) were used, and they were combined using "AND" and "OR" Boolean operators. An asterisk was added to descriptors in order to access studies that displayed words from the same root. Initially, a search strategy was created in

PubMed, then reproduced and adapted for all other databases and virtual library when necessary (Table 1).

Inclusion criteria were original articles in any language with abstract available electronically and no time frame. Exclusion

criteria were duplicate articles, studies that did not answer the research question, theses, dissertations, monographs, abstracts and letters to the editor.

Table 1. PICO strategy, descriptors and Pubmed search strategy, 2021

PICO strategy and descriptors		
P - (Population) - #1	Population deprived of liberty	Prisons
		Prision*
		Prisoners
		Incarceration
I - (Interest) - #2	Strategies	Health Communication
		Health Education
		Health Promotion
		Educational Technology
		Educational Technolog*
		Instructional Technolog*
		Communicable Disease Control
		Prevention primary
		Serologic Tests
		Diagnosis
Co - (Context) - #3	Syphilis prevention and control	Syphilis/prevention & control
		Syphilis
		Syphilis, Congenital
		Treponemal Infections
PubMed search strategy		
#1. ((((((Prisons[MeSH Terms]) OR (Prisons[Title/Abstract])) OR (Prison*[Title/Abstract])) OR (Prisoners[MeSH Terms])) OR (Prisoners[Title/Abstract])) OR (Incarceration*[Title/Abstract]))		
#2. (((((((((((((((Health Communication[MeSH Terms]) OR (Health Communication[Title/Abstract])) OR (Health education[MeSH Terms])) OR (Health education[Title/Abstract])) OR (Health promotion[MeSH Terms])) OR (Health promotion[Title/Abstract])) OR (Educational Technology[MeSH Terms])) OR (Educational Technology[Title/Abstract])) OR (Educational Technolog*[Title/Abstract])) OR (Instructional Technolog*[Title/Abstract])) OR (Communicable Disease Control[MeSH Terms])) OR (Prevention primary[MeSH Terms])) OR (Serologic Tests[MeSH Terms])) OR (Serologic Tests[Title/Abstract])) OR (Diagnostic Screening Programs[MeSH Terms])) OR (Diagnostic Screening Programs[Title/Abstract])) OR (Diagnosis[Title/Abstract]))		
#3. ((((((Syphilis/prevention & control[MeSH Terms]) OR (Syphilis[MeSH Terms])) OR (Syphilis[Title/Abstract])) OR (Syphilis, Congenital[MeSH Terms])) OR (Syphilis, Congenital[Title/Abstract])) OR (Treponemal Infections[MeSH Terms]))		
#4. = #1 AND #2 AND #3		

A data collection form containing the following information was prepared: author, title, year of publication, country, language, journal, objective, study design, level of evidence, type of strategy and final considerations. Based on recommendations of the Agency for Healthcare Research and Quality (AHRQ), the methodological design of studies

was used to assess the level of evidence. According to such a classification, the qualities of scientific evidence are categorized as follows: level 1 - meta-analysis of multiple controlled and randomized clinical trials; level 2 - individual study with experimental design; level 3 - quasi-experimental studies; level 4 - descriptive (non-experimental) or qualitative

studies; level 5 - case or experience reports; level 6 - expert opinion⁽¹⁰⁾.

The guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)⁽¹¹⁾ were adopted in the selection of publications. Initially, the articles were exported to the online EndNote program to remove duplicates. Then, the weighted choice of studies was made according to the eligibility criteria by reading the titles and abstracts. Subsequently, the selected articles were read in full. Relevant data from the studies were extracted by two researchers and inserted into an electronic form built in an Excel® spreadsheet based on eligibility criteria. Results were compared and differences resolved by consensus or with inclusion of a third reviewer when needed in order to favor the validation of the selection of studies. Descriptive analysis of data was performed and for a better understanding of information obtained, a synoptic table was built with data from articles in the final sample, which were discussed based on the available literature on the subject.

RESULTS

A total of 553 articles were identified. After applying the inclusion and exclusion criteria, 17 were selected for the final sample, as shown in the flowchart in Figure 1.

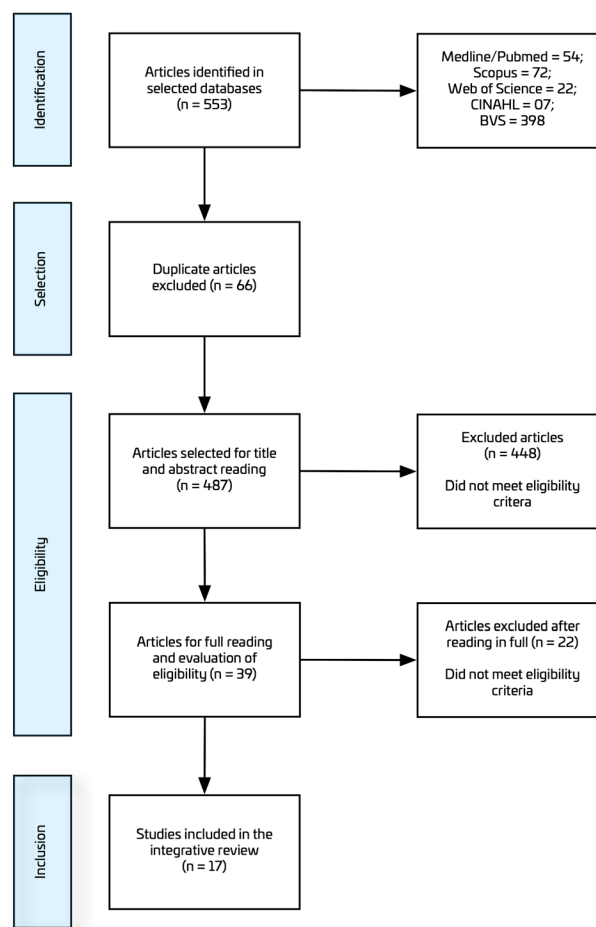
The 17 studies addressed the prevention and control of syphilis in the population deprived of liberty⁽¹²⁻²⁸⁾. Of these, 11 were found in Medline/Pubmed^(12-13,15,18-19,21-25,28), two in Scopus^(20,27) and four in the BVS^(14-15,17,26). Most studies were published in English^(12-13,15-16,18-24,27-28). There was the same quantity of articles in Spanish^(14,17) and Portuguese⁽²⁵⁻²⁶⁾. Regarding the level of evidence, most studies presented level 4, which corresponded to 14 studies^(12-13,15,18-28), two studies were level 3^(14,17) and one study was classified as level 5⁽¹⁶⁾. Publications were identified between years 1958 and 2021. The USA presented more publications on the subject, with a total of nine studies^(18-24,27-28), followed by Brazil with four studies^(12-13,25-26) and Bolivia⁽¹⁵⁻¹⁶⁾ and Cuba^(14,17) with two studies each.

The strategies for syphilis prevention and control used in the population deprived of liberty were: surveillance and epidemiological analysis^(13,18-20,22-23,25); educational intervention for prevention^(14,17); and a screening and treatment protocol^(12,15-16,21,24,26-28) (Table 2).

DISCUSSION

Most studies in this review were conducted in the USA^(17-23,26-27). The country ranks first in number of persons deprived of liberty worldwide, with a 2.1 million population. At the same time, this demonstrates the interest of researchers in the

Figure 1. Flow of the study selection and exclusion process, 2021



Source: Adapted from the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flowchart.

context of syphilis in the American population deprived of liberty⁽²⁹⁾.

On the other hand, the Brazilian scientific production is low even though the National Policy for Comprehensive Health Care for Persons Deprived of Liberty in the Prison System was instituted in 2014 with the aim to ensure health promotion and disease prevention actions in the prison system throughout the prison itinerary for the entire population deprived of liberty⁽³⁰⁾.

Regarding strategies used for syphilis prevention and control in the population deprived of liberty, surveillance and epidemiological analysis stood out in studies of the sample^(13,18-20,22-23,25). Epidemiological data seek to understand the dynamics of a disease or health problem and can provide important information to elucidate the role played by the prison environment in the risk for infection. The epidemiological monitoring of syphilis in this scenario is extremely important, because from technical-scientific information it is possible to identify the main determining

Table 2. Synthesis of studies according to authorship, year of publication, language, country, objective, level of evidence and strategy, 2021

Authors / year of publication / language	Country	Objective	Level of evidence	Strategy
Santana et al. / 2021 ⁽¹²⁾ / English	Brazil	To establish gaps in the syphilis test, data from a nationally representative sample of incarcerated women in Brazil were examined.	Level 4	Screening protocol
Da Silva Santana et al. / 2020 ⁽¹³⁾ / English	Brazil	To measure the lifetime prevalence of syphilis and sociodemographic and behavioral correlates of antibody positivity among female prisoners in Brazil.	Level 4	Surveillance and epidemiological analysis
Valle Yanes et al. / 2019 ⁽¹⁴⁾ / Spanish	Cuba	To evaluate the usefulness of an educational intervention to modify the level of knowledge about syphilis among inmates at the Establecimiento Penitenciario Provincial de Ciego de Ávila.	Level 3	Educational intervention for prevention
Montaño et al. / 2018 ⁽¹⁵⁾ / English	Bolivia	To evaluate the accuracy of the rapid treponemal test for the diagnosis of syphilis in women deprived of liberty in Bolivia.	Level 4	Screening protocol
Gétaz et al. / 2017 ⁽¹⁶⁾ / English	Bolivia	To investigate congenital syphilis among children who lived with infected mothers.	Level 5	Screening and treatment protocol
Valiente Hernández et al. / 2016 ⁽¹⁷⁾ / Spanish	Cuba	To conduct an educational intervention to reduce the incidence of syphilis.	Level 3	Educational intervention for prevention
Brodsky et al. / 2013 ⁽¹⁸⁾ / English	USA	To identify cases for the control of a syphilis outbreak in a prison and determine if clinical, case management and surveillance practices have influenced the occurrence, detection or management of the outbreak.	Level 4	Surveillance and epidemiological analysis
Ross et al. / 2006 ⁽¹⁹⁾ / English	USA	To assess long-term trends in the relationship between syphilis and cocaine use.	Level 4	Surveillance and epidemiological analysis
Kahn et al., / 2004 ⁽²⁰⁾ / English	USA	To estimate the number of initial syphilis cases identified in prisons between 1999 and 2002, and determine the characteristics of people likely to be identified with syphilis in prisons.	Level 4	Surveillance and epidemiological analysis
Schaffzin et al. / 2003 ⁽²¹⁾ / English	USA	To evaluate the sensitivity and predictive value of five curves of the syphilis reactor grid (SRG).	Level 4	Screening protocol
Wolfe et al. / 2001 ⁽²²⁾ / English	USA	To assess risk factors for syphilis and describe patterns of transmission.	Level 4	Surveillance and epidemiological analysis
Rich et al. / 2001 ⁽²³⁾ / English	USA	To describe correlates and risk factors for syphilis among women incarcerated in Rhode Island.	Level 4	Surveillance and epidemiological analysis
Silberstein et al. / 2000 ⁽²⁴⁾ / English	USA	To evaluate a screening and rapid treatment protocol for syphilis in a municipal prison.	Level 4	Screening and treatment protocol

Continue...

Table 2. Continuation.

Authors / year of publication / language	Country	Objective	Level of evidence	Strategy
Andrade et al. / 1989 ⁽²⁵⁾ / Portuguese	Brazil	To dimension the prevalence of <i>T. pallidum</i> infection in the prison population of Goiás and assess risk factors related to it.	Level 4	Surveillance and epidemiological analysis
Gomes / 1985 ⁽²⁶⁾ / Portuguese	Brazil	To identify positive serological reactions for syphilis.	Level 4	Screening protocol
Kaplan et al. / 1958 ⁽²⁷⁾ / English	USA	To evaluate the outcome of treatment of latent and asymptomatic syphilis: clinical outcome with reference to cardiovascular and central nervous system syphilis and related to a non-syphilitic control population.	Level 4	Screening and treatment protocol
Kaplan et al. / 1958 ⁽²⁸⁾ / English	USA	To assess the seroreversion pattern after treatment of latent syphilis.	Level 4	Screening and treatment protocol

and conditioning factors in the health of individuals and groups. This information contributes to the development of good health practices to be promoted among health managers and professionals.

Epidemiological indicators must be carefully analyzed in different scenarios, as the low number of cases of congenital syphilis does not necessarily justify the control of vertical transmission, since the disease can be present without notification. A high number of cases may suggest failures in care, such as difficulty in accessing health services and insufficient approach in the treatment of pregnant women and partners⁽³¹⁾.

In Brazil, health surveillance is part of a macro context of management of health actions and services. In this sense, acquired, gestational and congenital syphilis are diseases of compulsory notification, aiming at directing resources and strategies for protection of the population. Therefore, the information obtained from notifications in the Notifiable Diseases Information System enable the space-time monitoring of epidemics in the country to support the planning of specific and efficient actions⁽³²⁾.

When comparing international surveillance and epidemiological analysis strategies, syphilis is a nationally notifiable STI in the USA and its report to government agencies is required by law. In California, a US state facing a syphilis epidemic, many diagnosed people reported a history of recent incarceration or sexual contact with an incarcerated partner. Laboratories and providers of medical diagnostic and/or treatment services report notifiable disease data to the local health department. These data are collected and managed through an electronic surveillance system, the California Reportable Disease Information Exchange (CalREDIE)⁽³³⁾.

The knowledge of related factors that compromise the prevention, treatment and control of syphilis, whether at

international, national and local levels, is important. This information is considered an epidemiological strategy to guide measures aimed at the reduction in number of cases and consequently, the risks of vertical transmission. In the search for the proper use of this information, the involvement of epidemiological surveillance, managers and professionals working in this scenario is expected.

The establishment of a screening and treatment protocol was another strategy for syphilis prevention and control in the population deprived of liberty found in several studies. In Brazil, the Ministry of Health (MS) instituted the Clinical Protocol and Therapeutic Guidelines for Comprehensive Care for People with STIs, which defines that screening for syphilis in this population should be performed every six months⁽³⁴⁾. In the USA, screening of populations at higher risk of syphilis is recommended by the Centers for Disease Control and Prevention, the Preventive Services Task Force and the WHO⁽³³⁾.

Given the specificity of the prison population, the use of rapid tests for syphilis screening is recommended. As most people with the infection are asymptomatic, when they present signs and symptoms, they often do not perceive or value them^(35,36). Early diagnosis is the way to provide timely therapeutic support, reduce transmission and prevent possible complications⁽³⁷⁻³⁹⁾.

Women deprived of liberty during the pregnancy-puerperal period must have their rights guaranteed through prenatal consultations and the request for routine laboratory tests established by the MS. This screening is initiated by a treponemal test called the Syphilis Rapid Test, which is the most available nationally. Subsequently, the diagnosis must be confirmed by a non-treponemal test, the Venereal Disease Research Laboratory (VDRL) or the Rapid Plasma Reagin

(RPR), which allow the quantification of antibody titers to monitor the effectiveness of treatment⁽³⁵⁾.

The treatment of syphilis in the prison system does not differ from treatment in the general population, therefore, it is performed according to norms and protocols established by the MS and competent bodies in the health area. The recommended medication is administered, and if needed, referrals are made to other points in the Health Care Network in order to control the transmission of the infection and promote inmates' quality of life.

Although there are screening and treatment protocols, many rights are denied to the population deprived of liberty, especially the right to equitable health. In a study conducted in female prisons in capitals and metropolitan regions of Brazil, 55% of pregnant women had fewer prenatal consultations than recommended, 32% were not tested for syphilis and 4.6% of children were born with congenital syphilis⁽³⁶⁾. This reflects that congenital syphilis is an indicator of vulnerability in prenatal care.

There is a context still marked by precarious health care. The encouragement of discussions about health in the prison system and in educational institutions that train human resources for the Brazilian SUS is important, with a view to acquiring knowledge and developing skills and competences in order to contribute to the adequate performance of health professionals in this scenario⁽³⁷⁻³⁸⁾.

The embracement and counseling of the population deprived of liberty are as necessary as testing, with the aim to make them aware of vulnerabilities and identify the necessary interventions to minimize the risks of infection and transmission.

Only two studies addressing educational interventions as a strategy for syphilis prevention and control in the population deprived of liberty were identified^(14,17), both conducted in Cuba, a country with a public health care model based on health promotion and popular participation. The implementation of this type of strategy contributes to the multiplication of knowledge.

One of these studies⁽¹⁷⁾ brought an educational intervention with the objective of making inmates themselves health promoters in order to allow sharing knowledge among all inmates. In this intervention, 42 inmates were chosen and trained as health promoters. After the training, these individuals carried out a series of prevention activities such as: videos for debates, conversation circles and meetings for discussion in the pavilions of conjugal visits and in the prison school.

Health education actions that address preventive measures and treatment of syphilis need to be more widespread in prison environments. These strategies must be permeated by the collective construction of knowledge for people's empowerment for self-care. Furthermore, they must be

conducted through a dialogical process between educator and student, in which the exchange of knowledge in the face of lived reality will seek an emancipatory education based on experiences of the individual. Thus, the knowledge of participating actors must merge with concepts arising from scientific knowledge⁽³⁷⁾. This model of doing health education enables the development of a critical-reflexive awareness and the transformation of the subject inserted in the social context.

The use of active methodologies streamlines educational activities. The use of playful language facilitates the understanding of the topic addressed, corroborates the effectiveness of the right to information and health services and provides people deprived of liberty with the dissemination of this knowledge in other environments after incarceration⁽⁴⁰⁾.

The particularities of the population deprived of liberty should be reiterated when planning and executing educational interventions, considering the concepts of individual, social and programmatic vulnerability. In its individual dimension, vulnerability comprises the biological, emotional, cognitive and attitudinal aspects related to social relationships. Social vulnerability is characterized by cultural, social and economic aspects that determine the opportunities for access to goods and services. In turn, programmatic vulnerability refers to the social resources necessary to protect individuals from risks to integrity and physical, psychological and social wellbeing. These concepts not only seek to detect the probabilistic scores of a person being exposed to the disease, but rather to analyze the integrated influence of individual, social and programmatic dimensions on any person⁽⁴¹⁾.

From this perspective, it is possible to propose interventions to promote health and prevent syphilis as essential measures to overcome the process of transmission of this STI in prisons. In this context, nursing plays a fundamental role within the multidisciplinary health team in carrying out educational activities, rapid tests, women's health consultations, prenatal care and monitoring of reported cases, in addition to intersectoral coordination so that humanization of care is guaranteed.

CONCLUSION

We concluded that the most used strategies for the prevention and control of syphilis in the population deprived of liberty are related to the approaches of epidemiological analysis, the implementation of diagnostic protocols and educational interventions focused on prevention. These are relevant to assess the syphilis situation within the prison context and reduce its transmission.

In this study, was reached the conclusion that the strategies used in this specific population are the same as those recommended for the general population. However,

few educational intervention strategies for the prevention of syphilis were observed. This corroborates the need to expand health education activities and the use of scientifically proven educational resources in order to promote greater interaction, exchange of knowledge and sensitize people deprived of liberty about the available preventive measures, such as the distribution of condoms in these educational actions.

New studies must be developed both to follow the current context of the prison system and to raise new educational technologies that can be used as tools to strengthen health education actions for the prevention and control of this STI, considering the present particularities and the singularity of problems faced by this population, so that the right to comprehensive health is guaranteed.

REFERENCES

- Batista MIHDM, Paulino MR, Castro KS, Gueiros LAM, Leão JC, Carvalho AAT. High prevalence of syphilis in a female prison unit in Northeastern Brazil. *Einstein* [Internet]. 2020 [cited 2022 Sep 30];18:eAO4978. Available from: <https://doi.org/10.31744/einsteinjournal/2020AO4978>.
- World Health Organization. Global incidence and prevalence of selected curable sexually transmitted infections - 2008 [Internet]. Geneva: World Health Organization; 2012 [cited 2022 Sep 30]. Available from: <http://apps.who.int/iris/handle/10665/75181>.
- World Health Organization. Global guidance on criteria and processes for validation: Elimination of Mother-to-Child Transmission of HIV and Syphilis [Internet]. Geneva: World Health Organization; 2017. [cited 2022 Sep 30]. Disponível em: <https://apps.who.int/iris/rest/bitstreams/1091745/retrieve>.
- Tavoschi L, Vroling H, Madeddu G, Babudieri S, Monarca R, Vonk Noordegraaf-Schouten M, et al. Active Case Finding for Communicable Diseases in Prison Settings: Increasing Testing Coverage and Uptake among the Prison Population in the European Union/European Economic Area. *Epidemiol Rev* [Internet]. 2018 [cited 2022 Sep 30];40(1):105-20. Disponível em: <https://doi.org/10.1093/epirev/mxy001>.
- Correa ME, Croda J, Castro ARCM, Oliveira SMVL, Pompilio MA, Souza RO, et al. High Prevalence of *Treponema pallidum* Infection in Brazilian Prisoners. *Am J Trop Med Hyg* [Internet]. 2017 [cited 2022 Sep 30];97(4):1078-84. Available from: <https://doi.org/10.4269/ajtmh.17-0098>.
- Santana JCB, Reis FCA. Perception of The Nursing Team About Health Care in The Prison System. *R. pesq. cuid. fundam. online* [Internet]. 2019 [cited 2022 Sep 30];11(5):1142-7. Available from: <https://doi.org/10.9789/2175-5361.2019.v11i5.1142-1147>.
- Ministério da Saúde, Secretaria de Vigilância em Saúde. Agenda de Ações Estratégicas para Redução da Sífilis no Brasil [Internet]. Brasília: Ministério da Saúde, 2017 [cited 2022 Sep 30]. Available from: <https://portaldeboaspraticas.iff.fiocruz.br/biblioteca/agenda-de-aco-es-estrategicas-para-reducao-da-sifilis-no-brasil/>.
- Whittemore R. Combining evidence in nursing research: methods and implications. *Nurs Res* [Internet]. 2005 [cited 2022 Sep 30];54(1):56-62. Available from: <https://doi.org/10.1097/00006199-200501000-00008>.
- Aromataris E, Munn Z, editors. *JBIM Manual for Evidence Synthesis* [Internet]. Australia: JBI; 2020 [cited 2022 Sep 30]. Available from: <https://doi.org/10.46658/JBIMES-20-01>.
- Stetler CB, Morsi D, Rucki S, Broughton S, Corrigan B, Fitzgerald J, et al. Utilization-focused integrative reviews in a nursing service. *Appl Nurs Res* [Internet]. 1998 [cited 2022 Sep 30];11(4):195-206. Available from: [https://doi.org/10.1016/s0897-1897\(98\)80329-7](https://doi.org/10.1016/s0897-1897(98)80329-7).
- Liberati A, Altman DG, Tetzlaff J, Mulrow C, Gøtzsche PC, Ioannidis JPA, et al. The PRISMA Statement for Reporting Systematic Reviews and Meta-Analyses of Studies That Evaluate Health Care Interventions: Explanation and Elaboration. *PLOS Medicine* [Internet]. 2009 [cited 2022 Sep 30];6(7):e1000100. Available from: <https://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1000100>.
- Santana R da S, Kerr L, Mota RMS, Kendall C, Justa Neto R da, Macena HM, et al. Syphilis Testing Among Female Prisoners in Brazil: Results of a National Cross-sectional Survey. *Journal of the Association of Nurses in AIDS Care* [Internet]. 2021 Apr [cited 2022 Sep 30];32(2):140-50. Available from: <https://doi.org/10.1097/JNC.000000000000203>.
- Santana RS, Kerr L, Mota RS, Kendall C, Rutherford G, McFarland W. Lifetime Syphilis Prevalence and Associated Risk Factors Among Female Prisoners in Brazil. *Sex Transm Dis* [Internet]. 2020 [cited 2022 Sep 30];47(2):105-10. Available from: <https://doi.org/10.1097/OLQ.0000000000001113>.
- Yanes IV, Benítez YB, Pérez RPG, Oropesa AAR, Torre DA, Rodríguez SMH. Intervención educativa sobre sífilis en el Establecimiento Penitenciario Provincial de Ciego de Ávila. *MediCiego* [Internet]. 2019 [cited 2022 Sep 30];25(1):48-65. Available from: <http://www.revmediciego.sld.cu/index.php/mediciego/article/view/1297>.
- Montaño K, Flores A, Villarroel-Torrico M, Cossio N, Salcedo-Meneses A, Valencia-Rivero C, et al. Rapid diagnostic testing to improve access to screening for

- syphilis in prison. *Rev Esp Sanid Penit* [Internet]. 2018 [cited 2022 Sep 30];20(3):81-6. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6463320/>.
16. Gétaz L, Posfay-Barbe KM, Cossio N, Villarroel-Torrico M. Congenital syphilis in 2 children in a Bolivian prison. *Rev Esp Sanid Penit* [Internet]. 2017 [cited 2022 Nov 17];19(3):98-100. Available from: https://scielo.isciii.es/scielo.php?script=sci_arttext&pid=S1575-06202017000300098&lng=es&nrm=iso&tlang=en.
 17. Valiente Hernández Y, Hernández Moya M, Sánchez Poulot M. Formación de reclusos como promotores de salud para la prevención del contagio de sífilis en un centro penitenciario. *MEDISAN* [Internet]. 2016 [cited 2022 Sep 30];20(6):795-802. Available from: http://scielo.sld.cu/scielo.php?script=sci_abstract&pid=S1029-30192016000600008&lng=es&nrm=iso&tlang=es.
 18. Brodsky JL, Samuel MC, Mohle-Boetani JC, Ng RC, Miller J, Gorman JM, et al. Syphilis outbreak at a California men's prison, 2007-2008: propagation by lapses in clinical management, case management, and public health surveillance. *J Correct Health Care* [Internet]. 2013 [cited 2022 Sep 30];19(1):54-64. Available from: <https://doi.org/10.1177/1078345812458088>.
 19. Ross MW, Risser J, Peters RJ, Johnson RJ. Cocaine use and syphilis trends: findings from the arrestee drug abuse monitoring (ADAM) program and syphilis epidemiology in Houston. *Am J Addict* [Internet]. 2006 [cited 2022 Sep 30];15(6):473-7. Available from: <https://doi.org/10.1080/10550490601000462>.
 20. Kahn RH, Voigt RF, Swint E, Weinstock H. Early syphilis in the United States identified in corrections facilities, 1999-2002. *Sex Transm Dis* [Internet]. 2004 [cited 2022 Sep 30];31(6):360-4. Available from: <https://doi.org/10.1097/00007435-200406000-00008>.
 21. Schaffzin JK, Koumans EH, Kahn RH, Markowitz LE. Evaluation of syphilis reactor grids: optimizing impact. *Sex Transm Dis* [Internet]. 2003 [cited 2022 Sep 30];30(9):700-6. Available from: <https://doi.org/10.1097/01.OLQ.0000079518.04451.9D>.
 22. Wolfe MI, Xu F, Patel P, O'Cain M, Schillinger JA, St Louis ME, et al. An outbreak of syphilis in Alabama prisons: correctional health policy and communicable disease control. *Am J Public Health* [Internet]. 2001 [cited 2022 Sep 30];91(8):1220-5. Available from: <https://doi.org/10.2105/ajph.91.8.1220>.
 23. Rich JD, Hou JC, Charuvastra A, Towe CW, Lally M, Spaulding A, et al. Risk factors for syphilis among incarcerated women in Rhode Island. *AIDS Patient Care STDS* [Internet]. 2001 [cited 2022 Sep 30];15(11):581-5. Available from: <https://doi.org/10.1089/108729101753287676>.
 24. Silberstein GS, Coles FB, Greenberg A, Singer L, Voigt R. Effectiveness and cost-benefit of enhancements to a syphilis screening and treatment program at a county jail. *Sex Transm Dis* [Internet]. 2000 [cited 2022 Sep 30];27(9):508-7. Available from: <https://doi.org/10.1097/00007435-200010000-00004>.
 25. Andrade ALSS, Martelli CMT, Sousa LCS, Sousa MA, Zicker F. Soroprevalência e fatores de risco para sífilis em população carcerária de Goiás. *Rev Inst Med trop S Paulo* [Internet]. 1989 [cited 2022 Sep 30];31(3):177-82. Available from: <https://doi.org/10.1590/S0036-46651989000300007>.
 26. Gomes S. Incidência de reações sorológicas positivas para sífilis na população carcerária de Niterói. *Arq Bras Med* [Internet]. 1985;59(4):275-8.
 27. Kaplan BI, Ryan J, Thomas E, Cutler JC, Jenkins KH. Results of therapy of latent and asymptomatic syphilis in a prison population I. Clinical outcome with reference to cardiovascular and central nervous system syphilis and related to a nonsyphilitic control population. *J Chronic Dis* [Internet]. 1958 [cited 2022 Sep 30];7(4):300-11. Available from: [https://doi.org/10.1016/0021-9681\(58\)90087-0](https://doi.org/10.1016/0021-9681(58)90087-0).
 28. Kaplan BI, Ryan J, Thomas E, Cutler JC, Jones O. Results of therapy of latent and asymptomatic syphilis in a prison population II. Seroreversal following definitive treatment as shown by the New York State complement fixation test. *J Chronic Dis* [Internet]. 1958 [cited 2022 Sep 30];7(4):312-20. Available from: [https://doi.org/10.1016/0021-9681\(58\)90088-2](https://doi.org/10.1016/0021-9681(58)90088-2).
 29. Institute for Criminal Policy Research. *World Prison Population List*. 12th ed. London: ICPR; 2018.
 30. Ministério da Saúde, Secretaria de Atenção à Saúde. *Política Nacional de Atenção Integral à Saúde das Pessoas Privadas de Liberdade no Sistema Prisional* [Internet]. Brasília: Ministério da Saúde; 2014 [cited 2022 Sep 30]. Available from: <http://www.as.saude.ms.gov.br/wp-content/uploads/2016/06/Cartilha-PNAISP.pdf>.
 31. Maschio-Lima T, Machado ILL, Siqueira JPZ, Almeida MTG. Epidemiological profile of patients with congenital and gestational syphilis in a city in the State of São Paulo, Brazil. *Rev. Bras. Saude Mater. Infant.* [Internet]. 2019 [cited 2022 Sep 30];19(4):865-72. Available from: <https://doi.org/10.1590/1806-93042019000400007>.
 32. Marques CA, Siqueira MM, Portugal FB. Avaliação da não completude das notificações compulsórias de dengue registradas por município de pequeno porte no Brasil. *Ciênc. saúde coletiva* [Internet]. 2020 [cited 2022 Sep 30];25(3):891-900. Available from: <https://doi.org/10.1590/1413-81232020253.16162018>.
 33. Harmon JL, Dhaliwal SK, Burghardt NO, Koch-Kumar S, Walch J, Dockter A, et al. Routine Screening in a

- California Jail : Effect of Local Policy on Identification of Syphilis in a High-Incidence Area, 2016-2017. *Public Health Rep* [Internet]. 2020 [cited 2022 Sep 30];135(1_suppl):57S-64S. Available from: <https://doi.org/10.1177/0033354920928454>.
34. Forrestel AK, Kovarik CL, Katz KA. Sexually acquired syphilis: Laboratory diagnosis, management, and prevention. *J Am Acad Dermatol* [Internet]. 2020 [cited 2022 Sep 30];82(1):17-28. Available from: <https://doi.org/10.1016/j.jaad.2019.02.074>.
35. Ministério da Saúde, Secretaria de Vigilância em Saúde. Manual técnico para o diagnóstico da sífilis [Internet]. Brasília: Ministério da Saúde; 2021 [cited 2022 Nov 17]. Available from: <https://www.gov.br/saude/pt-br/assuntos/saude-de-a-a-z/s/sifilis/arquivos/manual-tecnico-para-o-diagnostico-da-sifilis.pdf/@download/file/manual-tecnico-para-o-diagnostico-da-sifilis.pdf>.
36. Leal MC, Ayres BVS, Esteves-Pereira AP, Sánchez AR, Larouze B. Nascer na prisão: gestação e parto atrás das grades no Brasil. *Ciênc. saúde colet.* [Internet]. 2016 [cited 2022 Sep 30];21(7):2061-70. Available from: <https://doi.org/10.1590/1413-81232015217.02592016>.
37. Fontana RT, Flores FR, Silva KC, Thomas LS, Pires LG, Oliveira NG, Feller SR. Reflexões sobre a educação em saúde como um processo emancipatório. *Braz. J. Hea. Rev.* [Internet]. 2020 [cited 2022 Sep 30];3(3):5196-203. Available from: <https://doi.org/10.34119/bjhrv3n3-096>.
38. Serra AEG, Lima RCRO. Promoção da saúde para pessoas no regime semiaberto do sistema penitenciário: relato de experiência. *Saúde debate* [Internet]. 2019 [cited 2022 Sep 30];43(123):1270-81. Available from: <https://doi.org/10.1590/0103-1104201912322>.
39. Silva PAS, Gomes LA, Amorim-Gaudêncio C, Lima KPN, Medeiros LB, Nogueira JA. Syphilis in women coming out of the prison system: prevalence and associated factors. *Rev Rene* [Internet]. 2018 [cited 2022 Sep 30];19:e3321. Available from: <https://doi.org/10.15253/2175-6783.2018193321>.
40. Nascimento JR, Barbosa KMG, Vieira MCA. Abordando infecções sexualmente transmissíveis com mulheres reclusas: um relato de experiência. *EXTRAMUROS – Revista de Extensão da UNIVASF* [Internet]. 2019 [cited 2022 Sep 30];7(2):104-14. Available from: <https://www.periodicos.univasf.edu.br/index.php/extramuros/article/view/1012>.
41. Ayres JRCM, França Júnior I, Calazans GJ, Saletti Filho HC. O conceito de vulnerabilidade e as práticas de saúde: novas perspectivas e desafios. In: Czeresnia D, Freitas CM, organizadores. *Promoção da saúde – conceitos, desafios, tendências*. 2nd ed. Rio de Janeiro: Fiocruz; 2009.

