Missed opportunities in treating pregnant women's sexual partners with syphilis: a systematic review

Lilian Pinto Mota Rodrigues Fernandes [1]
https://orcid.org/0000-0003-2379-1477

Cláudio Lima Souza [2]
https://orcid.org/0000-0002-8094-8357

Márcio Vasconcelos Oliveira [3]
https://orcid.org/0000-0002-8959-0478

[1] Programa de Pós-Graduação em Saúde Coletiva. Instituto Multidisciplinar em Saúde. Universidade Federal da Bahia. Rua Rio de Contas, Quadra 17, 58. Candeias. Vitória da conquista, BA, Brasil. CEP: 45.029-094. E- mail: lilianpmrf@gmail.com
[2,3] Instituto Multidisciplinar em Saúde. Universidade Federal da Bahia. Vitória da Conquista, BA, Brasil.

Abstract

Objectives: to compile studies in the literature that deal with missed opportunities related in treating pregnant women's partners with syphilis

Methods: this is a systematic review from SciELO, PUBMED, Lilacs and BVS databases, using articles published between 2008 and 2018. The research was carried out between April and August 2019 and followed PRISMA guideline recommendation

Results: 56,686 titles were identified and 53 were extracted in which addressed aspects related intreating pregnant women's partners with syphilis. Most studies were National, representing 60.7% of the researched articles. 51% of them used the Sistemas de Informação de Agravos Notificados (SINAN) (Notified Diseases Information System) as a database, followed by the use of Questionnaires / Interviews (33.9%) and consulted patients' files (15.1%). The factors most associated with the non-treatment of the pregnant women's partners with syphilis were: structuring /quality in the services from the aspect related to failures in prenatal care, characteristics of pregnant women that interfere in their treatment and aspects related to the cultural particularities that involvemen's healthcare.

Conclusion: in all continents, the main aspect related to failures in the treatment of the partners/pregnant women with syphilis is associated with low quality in prenatal care.

Key words *Syphilis, Sexual partners, Therapeutic*

http://dx.doi.org/10.1590/1806-93042021000200002

Introduction

Syphilis is a secular disease and still represents an important public health problem worldwide. Epidemic trends have been reported in the countryside of China, despite strategies for early detection and treatment of the cases.[1] In North America and Greenland, the incidence of syphilis increased from zero in 2010 to 95.7 per 100,000 inhabitants in 2014.[2]

The increase in syphilis cases around the world has a negative impact on the economy, patients, their families and the society in general. In the providence of Guangdong-China, the cost on syphilis in 2014 reached US$ 730,000.00. Of this amount, 73.23% were related to direct costs with tertiary syphilis.[3] Under the psychological aspect, there has been an increase in the feelings of anguish, pain and suffering in mothers who had transmitted syphilis to their children. In addition to the increase in fear, despair and impotence of hospitalizing their babies, they were submitted to invasive hospital procedures.[4]

Studies in Brazil show a similar picture. In the Northeast region, a substantial increase in the diagnosis and notifications on syphilis cases were observed between 2008 and 2013, with an incidence of congenital syphilis of 13.8 cases/1,000.[5] A study was carried out in an important city in the Southeast region, demonstrating an increase of syphilis in the vertical transmission rate of 6.5% from 2014 to 2015, attributing to the pregnant women's reinfection were due to inadequate treatment or absence of the partners, despite the fact that pregnant women were being treated correctly.[6] Regarding to treatment, several studies[7-10] point out the existence of low treatment rates in women's sexual partners with syphilis, as well as the lack of information registered.

Serafim *et al*.[11] in a study carried out in the South region in Brazil, registered a statistically significant association between the lack of treatment of the partner and an increase in the incidence of congenital syphilis. In this same study, the non-treatment of the partner was associated with neonatal death and abortions, resulting in pregnant women's recontamination. These findings corroborate with Cardoso *et al*.[12] in a study carried out in the city of Fortaleza-Ceará.

The high number of partners treated for syphilis inappropriately reflects the inefficiency of health services that has not contributed to the interruption in the transmission chain. The maintenance of infected individuals allows to disseminate the disease and re-expose pregnant women, increasing the vertical transmission, which implies an increase in infant morbidity and mortality and higher health costs. Thus, it becomes opportune and necessary to implement efforts for the concomitant treatment on pregnant women and partners as a primary strategy to control syphilis.[13-16]

Based on this assumption, the present study evaluated scientific publications from 2008 to 2018, presenting main factors associated with the non-treatment of the pregnant women's sexual partners with syphilis, and willing to help health professionals and managers to reduce the missed opportunities therapeutic for this group as a crucial point in fighting against syphilis.

Methods

This is a systematic review conducted in accordance with PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyzes) recommendation on the non-treatment of the pregnant women's partners with syphilis.

The articles were chosen according to: types of studies - articles as an object, treatment for the pregnant women's partners with syphilis, which would bring in their results the description of the partners' characteristics who adhered or not to the treatment, published between 2008 to 2018 in English, Portuguese and Spanish languages. Cross-sectional, descriptive, documentary, qualitative, ecological, case-control, theoretical reflection, quasi-experimental and mixed methods studies were included. Types of participants - pregnant women's sexual partners diagnosed with syphilis and types of results - articles that comprise the present review deal with the investigation of factors associated with the treatment of the pregnant women's sexual partners diagnosed with syphilis.

A survey of the articles was carried out between April and August 2019 in these databases: *Literatura da América Latina e do Caribe em Ciências da Saúde* (LILACS), Scientific Electronic Library Online (SciELO), United States National Library of Medicine (PUBMED) and *Biblioteca Virtual de Saúde* (BVS).

The search strategy in the Scielo, Lilacs and BVS databases included the terms: sífilis and parceiros", "sífilis and tratamento". For the PUBMED database, the term used was "syphilis and partners".

After selecting, the articles were checked for duplicity in the databases and subsequently read the abstracts, proceeding with the exclusion of those that

did not address factors associated with the treatment of the pregnant women's sexual partners with syphilis. Finally, the reading of the articles in full was established.

After reading the articles, the data of interest for this review were extracted, using a collection instrument prepared by the authors.

The information extracted from the studies included: Year of publication, title, place of publication, journal, purpose of the article, summary of the content and excerpts on the partners' treatment.

The main risks of bias were verified in the studies evaluated, observing selection, survival and Berkson bias for case-control studies. For cross-sectional studies, there was a greater risk for instrument, interviewer, memory and underreporting bias in the information systems, in addition to information bias is due to secondary data. Another limitation referred to the ecological studies design, which did not allow direct interpretations of the results at an individual level, whereas the descriptive approach is limited only to univariate analyzes.

Results

After applying the uni-terms, 56,686 articles were found, distributed as followed: 140 on SciELO platform, 1,073 LILACS, 16,278 PubMed and 39,195 BVS. After applying the eligibility criteria, reading titles, excluding duplicates, reading abstracts and full texts, 53 studies were selected for this review (Figure 1).

Studies features

The year with the largest number of publications was 2017, with 16 studies (30.1%), followed by 2015 with 07 (13.2%). 12 studies were published in 2012 and 2016, 06 studies each year (11.3%). In 2013, 05 (9.4%). In the years 2010, 2014 and 2018, 03 studies each year (5.7%). And in 2009 and 2011, 2 studies respectively (3.8%).

Regarding the place of publication, 07 (13.2%) studies were identified in international databases, the others in national databases with the following distributions of regions: Southeast 25 (47.1%), Northeast and South 9 studies respectively (17%) and the Midwest 03 (5.7%).

The type of study most performed in the period was cross-sectional with 24 studies (45.2%) followed by descriptive with 12 (22.5%), documentary 2 (3.8%), qualitative 5 (9.49%), ecological 4 (7.57%), case-control 2 (3.8%), theoretical reflection 2 (3.8%), quasi-experimental study 1 (2%) and mixed methods 1 (2%).

In relation to the language published, the distribution was as followed: 31 (58.5%) Portuguese, 17 (32%) English, 02 (3.8%) Spanish. Published in two languages: 02 (3.8%) English and Portuguese and 01 (1.9%) English and Spanish.

Discussion

The compilation of data from the 53 articles made it possible to observe the high number of partners not adequately treated for syphilis, a factor attributed to the inefficiency and fragility of the health services, with failures in the prenatal care.[13,15,17] It was also found that the lack of communication of the pregnant woman to her partner when the discovery of syphilis was related to the non-treatment of her partners.[18,19]

Service-related factors

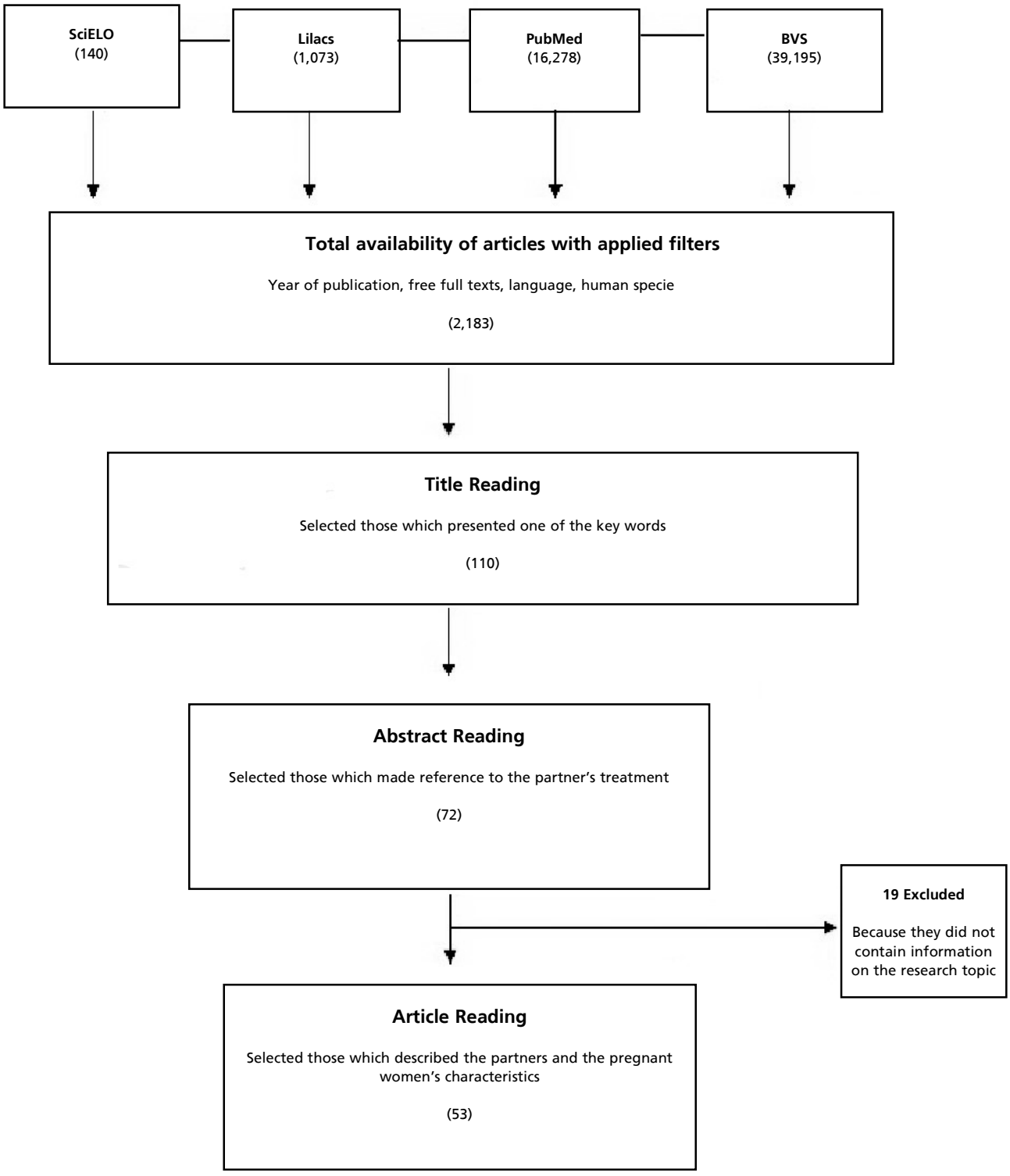
Studies carried out in Palmas-Tocantins, Córdoba-Colombia and Malvinas Argentinas[20-22] found weaknesses in the health services for the congenital syphilis control. The flaws found were from the late diagnosis between the 2nd and 3rd trimester of pregnancy or during delivery and / or curettage to a misclassification as to the stage of the disease, factors that generated missed opportunity for the pregnant women and their partners to treat.

According to Dou *et al*.[23] in a study conducted in China, more than 55% of women with syphilis started treatment after 37 weeks of gestation or were not treated. In this study,[23] 68.8% of the partners did not perform tests for syphilis, implying an unknown condition of infection status and lack of active search for these partners.[24] This research demonstrated the missed opportunity to diagnose and treat partners at the time when the pregnant woman was diagnosed.[25]

The inoperability of the health services was evidenced when the communication of the positive result of the syphilis test to the partner became the pregnant woman's responsibility.[18] Garcia *et al*.[26] pointed out that HIV-positive women who notified their partners to attend health services resulted in only 31.9% of properly treated partners. The Ministry of Health (MH) initially directs a calling of the partners to the health service through the pregnant woman, if he does not respond within 15 days, communication must be carried out by means of correspondence that guarantees the confidentiality of the information. When all available resources are exhausted, an active search must be carried out. In addition, the inclusion of partners in the prenatal

Figure 1

Flowchart on article selection for the systematic review.



consultations is also guided in order to guarantee the interruption of the transmission chain.[27]

Another important limiting issue in the treatment of syphilis in pregnant women and partners was the temporary unavailability of penicillin,[6,28] the first therapeutic option in the primary care network, in addition to being the only drug capable of crossing the placental barrier and avoiding congenital syphilis.[7,14,26] In view of the national shortage of penicillin since 2014, the MH advised, through a joint information note (n. 109/2015), its exclusive use for pregnant women and children with syphilis. As for the partners, second-choice antibiotics with long-term treatment (8 to 15 days) were recommended, which hindered the treatment adherence.[6] In 2019, information note Number 30/2019-CGAE/DIAHV/SVS/MS included partnerships as a priority for the use of penicillin.[29]

Despite the improvement in the primary care regarding to the minimum number of prenatal consultations of 6 according to the MH, failures in the diagnosis and timely treatment for pregnant women and partners still occur.[30-33] Mello[28] described difficulties in access and deficient structure in the prenatal services (closing down family health units, lack of professionals and kits for diagnosing syphilis), which imply precarious care.

Another factor that contributes to the non-treatment of syphilis in both pregnant women and partners was the opening hours of the health units. A study carried out by García *et al*.[26] revealed that the operation of the units, as a rule, coincides with people's working hours. This fact makes it difficult to seek treatment and points out that the establishment with different hours in some units is an important alternative and that could reduce the opportunities for treatment.

Saraceni and Miranda[34] presented the family health strategy as a favorable condition for the active search of cases and partners who do not show up for treatment, through the community health agent in their territory, improving health surveillance coverage. Added to this is the implementation of rapid tests for syphilis at Health Units (US) that facilitated access for diagnosis.[35,36]

Still in relation to the failures in the services, it is worth noting the lack of preparation in professionals involved in prenatal care. Studies[10,37] have shown that syphilis knowledge, practices and management among obstetricians and nurses have a low level of agreement with the MH protocols. In addition, few professionals have adequate knowledge about vertical transmission of syphilis.[38,39] Health professionals have a fundamental role in controlling syphilis, so it is necessary that they are able to deal efficiently with these situations.[40]

Andrade *et al*.[41] specifically identified deficiencies among nurses as to the proper interpretation of the results of the Venereal Disease Research Laboratory (VDRL) and knowledge about the treatment and identification of syphilis phases. In addition, the nurses' low autonomy to order tests and prescribe treatment limits their performance.[39]

It is also worth mentioning the difficulties encountered by health professionals in approaching pregnant women's partners with syphilis, as a consequence of public policies that exclude men's health, with an essential focus on maternal and child.[18,42,43] This type of approach impacts on the loss of the diagnosis and the treatment on partners and contributes to the maintenance of the syphilis transmission chain and its various clinical forms.

The missed opportunities for syphilis treatment can also be evidenced by the discrepancy between the information reported by pregnant woman and the registrations on the prenatal card. For example, pregnant women who do not know how to inform about the test result or are mistaken when referring to a non-reactive result, presenting a positive test or positive test without registration on the card. Faced with this issue, there is a necessity to review the procedures adopted by health professionals so that greater accountability is attributed for an avoidable error.[17]

The importance of counseling by professionals was addressed in a study conducted in Peru. It was found that the way health professionals approached partners through the information provided had a positive influence on the adherence of the treatment and notification of cases.[26]

Pregnant women-related factors

Although it is not an exclusive disease of the lower income classes, studies[19,28,44,45] demonstrate that the low socioeconomic level and low education of pregnant women are limiting factors to understand the importance of preventive measures. Added to this, there is the lack of knowledge or mistaken knowledge about the disease and even the lack of interest and denial about health issues limit the control of syphilis.[4] Still, the financial resources are insufficient to travel to the health units for prenatal consultations and to laboratories for exams, showing an important vulnerability to access health services.[11,28]

Another issue that is noteworthy is the number of partners of pregnant women, since not all have a single and fixed partner. Studies have pointed

out[11,24,46] an increased risk of up to three times the occurrence of syphilis among pregnant women who had three or more sexual partners in one year, this variable also proved to be relevant for inadequate treatment of syphilis. Other women reported feeling ashamed of the syphilis diagnosis and expressed difficulty in revealing the diagnosis to their partners, fear of being rejected or failing to deal with the possibility of infidelity. Given the above, syphilis can produce negative repercussions in the marital relationship, generating distrust and even separation. For these reasons, some women choose to hide the diagnosis from their partners, making it impossible to treat them.[19] This fact also impacts on the missed opportunity to treat the partner and the risk of recontamination him or herself.

Another situation reported by some women is the fear of domestic violence when communicating to their partners about the diagnosis, as it is a Sexually Transmitted Infection (STI) with the possibility of having been acquired in extramarital relationships or even with previous sexual partners.[26,47]

Factors related to the partner

A study carried out in the city of Guarapuava-PR identified a high prevalence of gestational and congenital syphilis. There was a significant association between syphilis treatment for the partner and for the pregnant woman, only 47% of the partners were treated properly. The low adherence of partners contributed to the inadequate treatment for pregnant women,[46,48] exposing them to reinfection and an increased risk of congenital syphilis.[10,49]

Adherence to treatment by partners permeates a multifactorial scenario that involves aspects related to socioeconomic, cultural, educational and lack of knowledge about the disease. These factors go beyond their understanding on the diagnosis given to them, as most of the time they are asymptomatic or have a negative test result, in addition to not being able to understand the consequences that can occur to the baby.[49-52] A study by García *et al*.[26] in Peru, identified that the low therapeutic adherence of pregnant women's partners with syphilis was also associated with a low demand from partners to treat and did not want to provide personal information in fear of being "registered" in the system. Other studies[9,53,54] point out the break-up of the relationship between the pregnant women and their partners and the non-attendance or refusal from the partners to perform a serology test as reasons not to be treated.

In Brazil, the partner's visit to the health unit depends on the pregnant woman. Thus, it is important for these pregnant women to be properly guided as to the importance of treating syphilis.[30] It is still necessary to encourage the participation of the partners in prenatal care and educational interventions promoted by the primary healthcare professionals, in addition to ensure access to diagnose and treat this population.[6,24,28,50]

It is essential to understand the importance of assessing and treating the partners for interrupting the infection transmission chain. The MH recommends preventive treatment for these partners, with a dose of penicillin (2,400,000UI divided into two injections in each of the glutes), regardless of having signs and symptoms or even with a first negative exam. In addition, after 30 days, a new exam must be requested.[55]

Conclusion

The gathering of evidence from this study demonstrates the importance of treating pregnant women 's sexual partners with syphilis as essential for disease control, in addition to the need for an appropriate approach for the success of this attempt. There is a consensus in the studies that the failure related to the partner / pregnant women's treatment on syphilis mainly concerns the weaknesses and deficiencies in prenatal care and the aspects related to men's healthcare.

In this sense, it is necessary to put into practice the proposals recommended by the Ministry of Health, in regard to training professionals in the primary care, insertion of partners in prenatal consultations and structuring services. In addition, new strategies for capturing and guaranteeing adherence to treat partners and pregnant women with syphilis are necessary, aiming for the interruption of the transmission chain and to reduce vertical transmission, which would imply in significant savings in public spending on health expenditure, due to the evolution of cases of secondary and tertiary syphilis, in addition to congenital syphilis by vertical transmission.

Authors' contribution

All authors contributed equally in all the stages of the manuscript and approved the final version of the article.

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Received on June 9, 2020

Final version presented on December 29, 2020

Approved on March 25, 2021