

ORIGINAL ARTICLE

ACTIONS FOR PREVENTION OF VERTICAL TRANSMISSION OF SYPHILIS OFFERED TO THE INDIGENOUS POPULATION

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ABSTRACT

Objective: to identify actions to prevent vertical transmission of syphilis offered to the indigenous population in Mato Grosso do Sul, Brazil.

Methods: quantitative and cross-sectional study carried out with 33 nurses with the use of a self-administered questionnaire between May and August 2018 that had three components: laboratory care, clinical care, and health promotion in an intercultural context. Averages of the answers and their standard deviations were calculated.

Results: the study indicated availability of the syphilis diagnostic test, although the time for the test to be sent back to health services was too long. For clinical care, availability of penicillin G benzathine and professional competence to treat pregnant women and newborns proved relevant. For health promotion, training and knowledge regarding sociocultural aspects related to syphilis proved fragile.

Conclusion: the set of actions to prevent vertical transmission of syphilis found indicated partial gains, which compromises the increase in the teams' responsiveness in the treatment of pregnant women and newborns.

DESCRIPTORS: Indigenous Population; Congenital Syphilis; Maternal and Child Health; Prenatal Care; Nursing.

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AÇÕES DE PREVENÇÃO DA TRANSMISSÃO VERTICAL DA SÍFILIS OFERTADAS À POPULAÇÃO INDÍGENA

RESUMO

Objetivo: identificar as ações de prevenção da transmissão vertical da sífilis ofertadas à população indígena de Mato Grosso do Sul.

Método: estudo quantitativo, transversal, com 33 enfermeiros, utilizando-se de questionário autoaplicável, de maio a agosto de 2018, contendo três componentes (laboratorial, assistência clínica e promoção da saúde em contexto intercultural). Foi calculada média das respostas e desvio padrão da média.

Resultados: verificou-se a disponibilidade do exame no diagnóstico da sífilis, embora houvesse demora no seu tempo de retorno. Para a assistência clínica, a disponibilidade da penicilina G benzatina e competência profissional para tratar a gestante e o recém-nascido mostraram-se relevantes. Para a promoção da saúde, a capacitação e conhecimento sobre os aspectos socioculturais relacionados à sífilis apresentaram-se frágeis.

Conclusão: o conjunto de ações de prevenção da transmissão vertical da sífilis revela ganhos ainda parciais e comprometem a ampliação de capacidade de resposta das equipes no tratamento da gestante e recém-nascido.

DESCRITORES: População Indígena; Sífilis Congênita; Saúde Materno-Infantil; Cuidado Pré-Natal; Enfermagem.

ACCIONES DE PREVENCIÓN DE LA TRANSMISIÓN VERTICAL DE LA SÍFILIS OFRECIDAS A LA POBLACIÓN INDÍGENA

RESUMEN:

Objetivo: Identificar acciones de prevención de transmisión vertical de la sífilis ofrecidas a la población indígena de Mato Grosso do Sul.

Método: Estudio cuantitativo, transversal, con 33 enfermeros, utilizándose cuestionario autoaplicable, entre mayo y agosto de 2018, incluyéndose tres componentes (laboratorial, atención clínica y promoción de salud en contexto intercultural). Se calculó promedio de respuestas y desvío estándar del promedio.

Resultados: Se verificó disponibilidad del examen de diagnóstico de sífilis, aunque existiera demora del resultado. Para atención clínica, resultaron relevantes: disponibilidad de penicilina G benzatina y competencia profesional para tratar a la embarazada y al recién nacido. En promoción de salud se comprobó frágil capacitación y conocimiento sobre aspectos socioculturales relativos a la sífilis.

Conclusión: El conjunto de acciones de prevención de transmisión vertical de la sífilis demuestra beneficios aún parciales y comprometen ampliación de capacidad de respuesta de los equipos para tratamiento de la embarazada y del recién nacido.

DESCRIPTORES: Población Indígena; Sífilis Congénita; Salud Materno-infantil; Atención Prenatal; Enfermería.

INTRODUCTION

Syphilis is a sexually transmitted infection caused by the bacterium *Treponema pallidum*⁽¹⁾. If this infection occurs during pregnancy and is not treated or is treated inadequately, there is risk of vertical transmission, with outcomes that include stillbirths, neonatal deaths, and complications in the health of babies with congenital syphilis⁽²⁾. However, preventing and/or healing this infection during pregnancy is feasible by means of high-quality prenatal care, based on timely diagnosis and treatment, with low-cost technologies that are known to be effective and cost-effective⁽³⁾.

Global eradication of congenital syphilis requires improving access to diagnosis and early treatment of the disease during pregnancy, with clinical follow-up of pregnant women and diagnosis of their babies, in addition to treatment and management of partners, to reduce syphilis rates in the population as a whole⁽⁴⁾.

In Brazil, these actions were incorporated into maternal and child health public policies. One of the strategical axes of these policies is offering syphilis early diagnosis by means of a rapid test and expanding access of pregnant women and their partners to high-quality care practices based on protocols and guidelines oriented toward preventing vertical transmission of the infection⁽¹⁾.

International estimates showed that occurrence of syphilis in pregnant women remained stable between 2012 and 2016, with a prevalence of 0.69%, corresponding to 473/100 thousand live births in 2016. In the same year, the congenital syphilis rate worldwide was 661 thousand cases⁽⁴⁾.

A study carried out in six Brazilian states from 2007 to 2012 showed a growth in the detection of syphilis in pregnant women, which may have been driven by the increase in case reporting, with an increment of 21% in the state of Amazonas and 75% in the state of Rio de Janeiro. The incidence of congenital syphilis also increased, varying from 35.6% in the Federal District to 639.9% in the state of Rio Grande do Sul⁽⁵⁾.

However, information about syphilis in pregnant women and congenital syphilis in indigenous people is still scarce and characterized by case underreporting. Additionally, prenatal care and application of tests for syphilis diagnosis are incipient⁽⁶⁻⁷⁾. It is imperative to obtain information on how actions to prevent congenital syphilis are being implemented in this population to gather resources to inform decisions based on the development of an effective and culturally unique approach.

The present study had the objective of identifying actions to prevent vertical transmission of syphilis offered to the indigenous population in the state of Mato Grosso do Sul, Brazil.

METHOD

Cross-sectional study with a quantitative approach carried out in base zones that are part of the Special Indigenous Health District in Mato Grosso do Sul, which is made up of 14 Base Poles and Multidisciplinary Indigenous Health Teams (EMSIs, as per its initialism in Portuguese) that developed their activities in 75 indigenous villages and 26 indigenous camps.

All the 37 nurses who worked in the ten Base Poles that reported cases of syphilis in pregnant women and had a case of early congenital syphilis as an outcome in 2015 were eligible. Of these 37, four were excluded for being on vacation or on medical leave

when data were collected. The final sample was 33 nurses (22 from EMSIs and 11 technical coordinators) who worked in the selected Poles.

Data collection occurred from May to August 2018 by asking the nurses to fill out a self-applicable questionnaire, whose completion lasted 20 minutes on average. Application of the questionnaire happened in the Base Poles on dates that were previously scheduled with the person responsible for technical reference. The design and score of the three components of the instrument (laboratory care, clinical care, and health promotion in an intercultural context) considered the importance of actions according to the following documents: Clinical Protocol and Therapeutic Guidelines for Prevention of Vertical Transmission of HIV, Syphilis and Viral Hepatitis⁽¹⁾, Brazilian National Policy of Attention to the Health of Indigenous People⁽⁸⁾, and Brazilian National Policy of Health Promotion⁽⁹⁾.

A Likert scale showing five answer options was used in the instrument, and each had its corresponding scores: excellent/always/extremely important (five points), very good/often/very important (four points), good/sometimes/important (three points), regular/rarely/little important (two points), and bad/never/not important (one point).

The arithmetic average of the values of each component and their verification items was calculated to classify the actions, and ranges organized into four strata were attributed: adequate (4.0 to 5.0), partially adequate (3.0 to 3.99), incipient (2.1 to 2.99), and inadequate (1.0 to 2.09)⁽¹⁰⁾. Standard deviations of the averages were calculated to identify nurses' perception convergence or divergence, which were categorized as high convergence (0.0 to 0.59), convergence (0.6 to 1.09), divergence (1.1 to 1.59) and high divergence (≥ 1.6).

The calculations were performed by using the statistics software SPSS version 24.0 for each component, its verification items, and the overall score of the actions to prevent vertical transmission of syphilis. Data were inserted into Microsoft Excel 2010 by a typer and reviewed by the study coordinator. The results were shown in tables and expressed as averages and their standard deviations.

The proposal of the present study was approved by the Research Ethics Committee at the Federal University of Mato Grosso do Sul and the Research Ethics Brazilian National Commission as per no. 2.155.788.

RESULTS

Regarding economic aspects, most of the participants (29 or 88%) were women whose age ranged from 27 to 60 years, with a mean age of 38.2 years. Time working in the Subsystem for Attention to Indigenous Health (SASI-SUS, as per its acronym in Portuguese) was between six months and 17 years, with an average time of 7.7 years. Regarding academic title, most of the professionals informed that they had a graduate degree. One of them had a title in the modality residence in indigenous health care and 23 (66.7%) had specialization, of whom 11 (50%) in family health primary care and eight (36.4%) in food and nutritional surveillance for indigenous health.

For the component laboratory care, the availability of the syphilis test carried out by the Prenatal Screening Program was classified as adequate. In contrast, the time for the test to be sent back to health services was considered incipient. In Mato Grosso do Sul, this screening is carried out by the Institute for Research, Education, and Diagnosis of the Association of Parents and Friends of People with Mental Impairment.

The availability of the venereal disease research laboratory (VDRL) test and the establishment of agreements with laboratory services of reference municipalities were partially adequate. The only item that showed a divergence between answers was Time for the prenatal screening result to be sent back to health services (Table 1).

Table 1 – Results for the laboratory care component and its verification items. Mato Grosso do Sul, Brazil, 2018

Laboratory care component	Score	Average±SD	Classification
Availability of the prenatal screening test ^{§§}	6	4.14±1.04 ^B	Adequate
Time for the prenatal screening result to be sent back to health services ^{§§}	6	2.50±1.19 ^C	Incipient
Availability of the VDRL test ^{†††}	6	3.32±1.04 ^B	Partially adequate
Establishment of agreements to carry out the VDRL test ^{†††}	2	3.18±1.05 ^B	Partially adequate
Component total score	20	3.23±0.71 ^B	Partially adequate

Notes: SD=average standard deviation; B=convergence (SD from 0.6 to 1.09); C=divergence (SD from 1.1 to 1.59); §§The screening is carried out by the Institute for Research, Education, and Diagnosis of the Association of Parents and Friends of People with Mental Impairment;†††VDRL=venereal disease research laboratory

The component clinical care has 16 verification items, of which 12 were classified as partially adequate and four as incipient. The verification items related to syphilis records, both in medical records and the pregnancy notebook, received the partially adequate classification, although divergence was found in the answers (SD=1.12 and SD=1.21, respectively). The items that showed greater relevance were Availability of penicillin G benzathine, Competence to treat pregnant women with syphilis, and Competence to offer follow-up to newborns with congenital syphilis, which obtained the classification partially adequate, with convergence between answers (SD=1.05; SD=0.73; SD=0.83, respectively) (Table 2).

Table 2 – Results for the clinical care component and its verification items. Mato Grosso do Sul, Brazil, 2018 (continues)

Clinical care component	Score	Average±SD	Classification
Availability of penicillin G benzathine	6	3.36±1.05 ^B	Partially adequate
Physical structure of the Health Unit	1	2.12±0.94 ^B	Incipient
Quantity of health professionals with a college degree	2	3.09±1.06 ^B	Partially adequate
Quantity of indigenous health agents	1	3.23±0.97 ^B	Partially adequate
Training about management of syphilis in pregnant women	3	2.14±0.94 ^B	Incipient
Knowledge regarding clinical protocols and therapeutic guidelines to prevent vertical transmission of syphilis	3	3.05±0.95 ^B	Partially adequate
Reading of technical manuals on prevention of syphilis in pregnant women and congenital syphilis	2	3.05±0.84 ^B	Partially adequate
Hospital counter-reference	1	2.68±0.95 ^B	Incipient

DIASI ^{†††} technical reports on syphilis in pregnant women and congenital syphilis	1	2.55±1.06 ^B	Incipient
Completion of reporting form of syphilis in pregnant women	2	3.32±1.09 ^B	Partially adequate
Completion of the pregnancy notebook regarding syphilis	3	3.27±1.12 ^C	Partially adequate
Completion of the pregnancy form regarding syphilis	3	3.05±1.21 ^C	Partially adequate
Competence to treat pregnant women with syphilis	6	3.36±0.73 ^B	Partially adequate
Competence to offer follow-up to NBs ^{§§§} with congenital syphilis	6	3.27±0.83 ^B	Partially adequate
EMSIs ^{††††} responsiveness to prevent vertical transmission of syphilis	5	3.59±0.80 ^B	Partially adequate
EMSIs ^{††††} responsiveness to offer follow-up to NBs with congenital syphilis	5	3.23±1.07 ^B	Partially adequate
Component total score	50	3.16±0.58 ^A	Partially adequate

Notes: SD=average standard deviation; A=high convergence (SD from 0.0 to 0.59); B=convergence (SD from 0.6 to 1.09); C=divergence (SD from 1.1 to 1.59); †††DIASI=Division of Attention to Indigenous Health (as per its acronym in Portuguese); §§§NB=newborn; ††††EMSIs=Multidisciplinary Indigenous Health Teams (as per its initialism in Portuguese)

Regarding the component health promotion in an intercultural context, the verification items classified as incipient were related to the offer of permanent education for the EMSI to develop its activities in an intercultural context and to the training of indigenous health agents on prevention of syphilis in indigenous pregnant women. The adequate classification was obtained for the importance of professionals' participating in permanent education actions that increase their knowledge regarding sociocultural aspects related to sexuality and self-care practices in the prevention of syphilis, as well as the importance of indigenous people's understanding of the actions to prevent and treat syphilis. Regarding the application of knowledge regarding sociocultural aspects in the actions to prevent syphilis performed by professionals in their work routine, the classification was partially adequate. This was the only item that showed a divergence between answers (Table 3).

Table 3 – Results for the health promotion in an intercultural context component and its verification items. Mato Grosso do Sul, Brazil, 2018 (continues)

Health promotion in an intercultural context component	Score	Average±SD	Classification
Training to work in an intercultural context	3	2.50±0.96 ^B	Incipient
Training for AISs ^{††††} on syphilis in pregnant women	3	2.36±0.95 ^B	Incipient
Competence to deal with sexually transmitted infections in pregnant women	5	3.55±0.74 ^B	Partially adequate
Knowledge regarding the sociocultural aspects related to sexuality and syphilis	5	3.05±0.84 ^B	Partially adequate

Importance of knowing the sociocultural aspects related to sexuality and prevention of syphilis	3	4.55±0.67 ^B	Adequate
Importance of the training about the sociocultural aspects related to sexuality and self-care practices to prevent syphilis	3	4.09±0.92 ^B	Adequate
Takes into account sociocultural aspects in the actions to prevent syphilis	5	3.45±1.14 ^C	Partially adequate
Importance of understanding syphilis to indigenous people and to adherence to the treatment	3	4.14±0.71 ^B	Adequate
Component total score	30	3.37±0.55 ^A	Partially adequate

Notes: SD=average standard deviation; A=high convergence (SD from 0.0 to 0.59); B=convergence (SD from 0.6 to 1.09); C=divergence (SD from 1.1 to 1.5); AISS=indigenous health agents (as per its acronym in Portuguese)

DISCUSSION

The results pointed to the importance of the participation of nurses in the delivery of care to pregnant women with syphilis and newborns with congenital syphilis, since these professionals can positively influence this type of assistance by helping offer high-quality prenatal care, sensitive to the sociocultural specificities that impact the vertical transmission of syphilis.

A study showed how important the work of nurses is in primary health care regarding the offer of qualified care during pregnancy to decrease the occurrence of congenital syphilis. Their work must follow a flow chart and a standard operating procedure that supports the decision-making process and contribute to comprehensive care⁽¹¹⁾.

The present study indicated that availability of the prenatal screening test was adequate, because the collection of samples for the test in all the villages occurred in the first prenatal appointment, by means of the Mato Grosso do Sul Pregnant Women's Protection State Program. However, the item related to the time for the test to be sent back to health services was classified as incipient, which resulted in delayed diagnoses. Results in print only were sent to the reference municipalities and, subsequently, to their Base Poles and teams.

For syphilis diagnosis, it is recommended to initiate the research process by carrying out a treponemal test (rapid test/fluorescent treponemal antibody absorption test, enzyme-linked immunosorbent assay) and the non-treponemal test (VDRL, rapid reagin test, toluidine red unheated serum test), with the latter to confirm the diagnosis and monitor the response to the treatment monthly⁽¹⁾. Offering the rapid test together with the non-treponemal test in health services on the same day in communities where access to prenatal care is difficult contributes to putting immediate treatment into practice⁽¹²⁾.

Availability of the VDRL test and coordination of the Base Pole with the laboratory services in the reference municipalities may be related to the obstacles in the establishment of agreements regarding the number of tests made available to the indigenous population by the municipalities and logistic difficulties in the transportation of indigenous pregnant women from villages to the municipalities. These problems may delay diagnosis and treatment and bring consequences to the possibilities of intervention to prevent congenital syphilis.

A study carried out with indigenous people in the state of Mato Grosso, Brazil,⁽¹³⁾ showed problems that impacted the accessibility of indigenous users to medium and high-complexity services. In addition to transportation-related barriers, there were obstacles in referring, with negative implications to care resolutiveness.

In 2015, the Brazilian Ministry of Health issued the Conjoint Informative Note no. 109/2015/GAB/SVS/MS, which provides information about the national shortage of supply of penicillins as a consequence of the lack of specific raw materials for their production in the global market and has orientations on the prioritization of penicillin G benzathine to treat syphilis in pregnant women and crystalline syphilis for congenital syphilis in Brazil, as well as alternatives for syphilis treatment⁽¹⁴⁾. However, according to the participants, availability of penicillin G benzathine was partially adequate.

This shortage was identified in seven countries in the Americas by the Pan American Health Organization and led to high congenital syphilis rates, which doubled between 2010 and 2015. This increase in the number of cases was attributed to lack of penicillin⁽¹⁵⁾.

The present study identified deficiency in the facilities of Indigenous Family Health Units located in the villages and insufficient quantity of professionals with a college degree and indigenous health agents responsible for primary health care actions. A similar situation was found in health services oriented toward the indigenous population in Cuiabá, state of Mato Grosso, Brazil, with precarious infrastructure in Casa de Saúde do Índio and insufficiency of human and material resources and supplies⁽¹³⁾.

It is important to stress that the primary health care actions oriented toward indigenous people are carried out by SASI-SUS. Although there were progresses in access to health services, several challenges related to the precariousness of the services' structure are still faced, and there is an unacceptable difference between health indicators recorded for this ethnic group and the rest of the population⁽¹⁶⁾.

Inciency of the training related to the management of syphilis in pregnant women, combined with the reduced knowledge regarding clinical protocols and therapeutic guidelines to prevent vertical transmission, reflected on the professionals' perception of their competence to manage the disease in indigenous pregnant women and their newborns.

A study on the association of congenital syphilis with execution of prenatal tests and treatment of pregnant women and their partners pointed to the permanent education of primary health care professionals as a tool that favors technical and scientific knowledge regarding the prevention and treatment of the disease, being considered one of the aspects that contribute to the decrease of the high rate of congenital syphilis⁽¹⁷⁾.

These results indicated the importance of encouraging and developing strategies for EMSIs and technical management departments to strengthen education actions related to sexually transmitted infections, especially syphilis. Other authors⁽¹⁸⁾ also showed that educational interventions addressing the knowledge of professionals regarding the management of syphilis helped improve early detection of syphilis during pregnancy and reduce vertical transmission.

According to the participants, poor quality in the completion of information about syphilis in reporting forms, pregnancy notebooks, and medical forms may result from difficulties to manage the records and the little understanding of the importance of recording these data for them to be used as a tool to speed up communication between health services, aiming to improve longitudinal care to pregnant women. Professionals' increasing of the use of pregnancy notebooks and perinatal forms may be an essential instrument to produce more reliable data about the prenatal care offered to indigenous women, as pointed out by a previous study⁽⁷⁾.

Improving these records is fundamental for generating information on diagnosis and treatment monitoring and for making eventual decisions about new interventions to prevent

vertical transmission of syphilis. It is necessary to focus efforts on improving permanent education actions to raise awareness of professionals of the importance of information recording to guide them to conduct cases and avoid procedure repetition⁽¹⁹⁾.

Additionally, recording data in reporting forms for indigenous pregnant women in the work routine in indigenous villages remains a challenge, because of the reduced standardization regarding reporting periodicity and flow, since Base Poles and Special Indigenous Health Districts are not notifying units at the Disease Reporting Information System, as shown by a study on syphilis underreporting in the indigenous population in Mato Grosso do Sul⁽⁶⁾.

A systematic review on HIV, syphilis, and hepatitis in indigenous people and Afro-descendants in 17 countries in Latin America emphasized the losses syphilis caused to indigenous pregnant women in Bolivia, Brazil, and Peru, who showed average serum prevalences of 7%, 1.52%, and 1.6%, respectively. The review highlighted the need to improve epidemiological surveillance systems to characterize these diseases in indigenous peoples⁽²⁰⁾.

The present study also showed the need to improve the responsiveness of EMSIs to prevent congenital syphilis and offer follow-up to exposed newborns. Responsiveness must consider the reorganization of the work process in the care to pregnant women with syphilis beyond the recommendations of the Ministry of Health and the identification of the needs and specificities of this group of pregnant women by using a contextually appropriate approach, as indicated in a previous study⁽²¹⁾.

The participants acknowledged the importance of training to implement a sociocultural health approach in actions to prevent syphilis. However, the incipient offer of this type of training seems to steer the work of these professionals into the biological dimension. Most times, the dominance of biomedical rationality precludes loosening actions toward an intercultural dialogue that respects traditional knowledge and makes effective primary health care feasible⁽¹⁶⁾.

The current preparation of human resources to work in intercultural contexts has proved incipient and does not favor the orientation of practices toward the health needs of indigenous peoples⁽¹⁶⁾.

It must be taken into account that the understanding indigenous people have about the modes of transmission and development of syphilis may favor their adherence to treatment. Health services must increase their efforts to coordinate with indigenous communities and seek to understand not only the external causes of the disease, but also the indigenous way of thinking regarding sexuality and ways to prevent sexually transmitted infections, to contribute to the management of syphilis⁽²²⁾.

The exclusive participation of nurses was considered a limitation of the present study, because other professionals included in the multidisciplinary health teams also provide indigenous pregnant women with syphilis with care.

CONCLUSION

The set of actions to prevent vertical transmission of syphilis showed gains that are still partial, with fragile mechanisms in the diagnosis and treatment of indigenous pregnant women with syphilis and in the reduced offer of training of professionals to work in interethnic contexts.

Consequently, the present study helped demonstrate that the actions to prevent vertical transmission of syphilis must be seen as a priority in the planning of indigenous

maternal and child care. It also emphasized the need to implement training programs that strengthen the work of nurses and other professionals of the multidisciplinary indigenous health team regarding the delivery of resolute care.

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