

# KNOWLEDGE ABOUT SYPHILIS AMONG PATIENTS OF TWO BASIC HEALTH UNITS IN THE STATE OF SÃO PAULO

## CONHECIMENTO SOBRE SÍFILIS ENTRE PACIENTES DE DUAS UNIDADES BÁSICAS DE SAÚDE DO INTERIOR DO ESTADO DE SÃO PAULO

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### ABSTRACT

**Introduction:** The number of new cases of syphilis remains high in Brazil, which may be related to the influence of demographic factors on the sexual behavior of individuals and the lack of basic knowledge about the disease, which is very important for prevention and treatment. **Objective:** To evaluate the knowledge about syphilis in a sample of patients from Basic Health Units (BHUs) in the city of São José do Rio Preto, São Paulo. **Methods:** This is a cross-sectional descriptive study. We assessed the perception of the participants about the disease through a questionnaire with objective questions. We analyzed the results using descriptive statistics. **Results:** We interviewed 193 patients – 95 in BHU1 and 98 in BHU2. With regard to syphilis, 65% of participants from the two BHUs claimed to know about the disease, and even though most have answered correctly about its means of transmission, more than 11% of BHU1 patients and almost 5% of those from BHU2 chose options not related to intercourse. Almost half of the patients did not know the main symptom in early syphilis. More than 50% of patients never talked to their sexual partner about this disease. 80% of patients from BHU1 and 95% from BHU2 were not tested for syphilis in the past 12 months. **Conclusion:** The patients' lack of knowledge about syphilis was evident in both BHU1 and 2, which is a real concern due to the severity this disease can reach. The results reinforce that health actions are necessary to prevent syphilis in the districts surveyed.

**Keywords:** syphilis; knowledge; primary prevention.

### RESUMO

**Introdução:** O número de casos novos de sífilis continua elevado no Brasil, o que pode estar relacionado à influência de fatores sociodemográficos no comportamento sexual do indivíduo e à falta de conhecimento básico da doença, importante para sua prevenção e tratamento. **Objetivo:** Avaliar o conhecimento sobre a sífilis de uma amostra de pacientes de duas Unidades Básicas de Saúde (UBSs) do município de São José do Rio Preto, estado de São Paulo. **Métodos:** Foi realizado um estudo descritivo e transversal. A percepção dos participantes sobre a doença foi avaliada mediante aplicação de questionário com perguntas objetivas. Os resultados obtidos foram analisados por estatística descritiva. **Resultados:** Foram entrevistadas 193 pessoas nas duas UBSs, sendo 95 na UBS 1 e 98 na UBS 2. No tocante à sífilis, 65% dos entrevistados nas duas unidades afirmaram saber a respeito da doença, e mesmo que a maioria tenha respondido corretamente sobre o meio de sua transmissão, mais de 11% dos pacientes da UBS 1 e quase 5% dos participantes da UBS 2 escolheram opções não associadas à relação sexual. Quase metade do total dos entrevistados não soube responder qual o principal sintoma no início da patologia. Mais de 50% das pessoas nunca conversaram com seu/sua parceiro(a) sexual sobre essa doença. Quanto à realização do teste para diagnóstico de sífilis nos últimos 12 meses, 80% dos entrevistados na UBS 1 e 95% dos entrevistados na UBS 2 responderam não o ter realizado. **Conclusão:** Entre os entrevistados das duas UBS, ficou evidente a falta de conhecimento sobre a sífilis, fato preocupante diante da gravidade que a doença pode gerar. Os resultados reforçam que ações de saúde precisam ser aplicadas como medidas de prevenção contra a sífilis nos bairros pesquisados.

**Palavras-chave:** sífilis; conhecimento; prevenção primária.

## INTRODUCTION

Syphilis is a systemic infectious disease caused by the etiologic agent *Treponema pallidum*, a bacterium most commonly transmitted by sexual contact, vertically (maternal), and rarely by blood. The disease affects only humans, has a chronic progression, and may be classified in terms of time (recent and late) and clinical manifestations (primary, secondary, and tertiary)<sup>(1)</sup>.

Due to the various ways the disease manifests and its asymptomatic periods, patients often feel healed or do not even identify signs and symptoms of the illness. Therefore, added to the increase in early sexual activity and risky sexual practices, the chance of infection and transmission of the disease becomes greater.

A study conducted by the Ministry of Health in partnership with the Brazilian Institute of Geography and Statistics (*Instituto Brasileiro de Geografia e Estatística* – IBGE) evaluated the sexual behavior of 60,973 male and female adolescents and showed that

about a quarter of them had intercourse, most of them at 13 years of age or younger, and about 25% did not use protection during the last intercourse. These factors considerably raise the transmission of syphilis and other sexually transmitted diseases like human immunodeficiency virus (HIV), becoming a public health problem. In addition, other elements may explain the increasing number of reported cases of the disease in Brazil, such as care failures during the prenatal period, diagnosis, and, more recently, the supply of penicillin G benzathine, used in the treatment of adults and pregnant women, and crystalline penicillin G, for newborns with congenital syphilis<sup>(2)</sup>.

The Epidemiological Bulletin of the Ministry of Health of the State of São Paulo announced an increase of 9.5 times the number of cases of acquired syphilis and five times of syphilis in pregnant women including, besides the capital, the city of São José do Rio Preto, as one of the main detection rate increase of the disease in the period from 2007 to 2014<sup>(3,4)</sup>.

It is also worth mentioning that with the quality of life improvement in old age and the development of treatments, such as hormone replacement, prostheses, and impotence drugs, older adults

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have experienced an extension of their sexual life. However, unsafe sexual practices contribute to this population vulnerability to sexually transmitted infections. Thus, it is extremely important to control syphilis by interrupting the transmission chain and preventing new cases, based on the population's knowledge of the disease, as well as ways of avoiding it. This process can achieve positive results with the constant and continuous recycling of health teams that play a fundamental role in patient counseling, seeking to show the need to communicate with the partner and encouraging them to use condoms during intercourse<sup>(5)</sup>.

## OBJECTIVE

To evaluate the knowledge about syphilis, its forms, transmission, and prevention in Basic Health Unit (BHU) patients from two districts of the city of São José do Rio Preto, State of São Paulo, and to relate it to the socioeconomic profile of the participants.

## METHODS

This is a cross-sectional descriptive study, whose instrument was a questionnaire in simple language, adapted to the users' reality, composed of objective questions addressing the means of transmission, signs and symptoms, and prevention of syphilis.

We selected two public BHUs in the city of São José do Rio Preto, São Paulo State. The selection criteria were the following: belonging to the Community Integration Program (*Programa de Integração da Comunidade – PIC*) of the medicine course from Faceres and having distinguished socioeconomic development. The first BHU is located in a region with a lower socioeconomic profile than the second<sup>(6)</sup>.

Patients in the waiting room of each BHU were invited to participate in the survey two mornings a week of July and September 2018 until the calculated sample size was reached. Considering an 86% estimate of people with the correct knowledge about syphilis transmission<sup>(7)</sup>, a 5% sampling error, and 95% confidence level, the calculation of the total sample size resulted in 186 participants (93 in each BHU).

The sample consisted of participants of both genders over 18 years of age with sufficient intellectual capacity to understand the questions and answer properly. Literate individuals responded without help, and the illiterate or with difficulty in reading were assisted by researchers who read the questions, indicating the answer chosen by them. A moment was reserved for clarifying any pertinent questions.

After agreeing to participate in the research, patients received a tablet connected to the Internet to answer the questionnaire prepared in Google Forms ([https://docs.google.com/forms/d/e/1FAIpQLSdtE-Qe5BIGQu9273yzO3S1b30nkZ2B0I34VAIvDntMR83aEGw/viewform?usp=sf\\_link](https://docs.google.com/forms/d/e/1FAIpQLSdtE-Qe5BIGQu9273yzO3S1b30nkZ2B0I34VAIvDntMR83aEGw/viewform?usp=sf_link)). The front page showed the Informed Consent Form (ICF); the participants should read and agree to it to access the questionnaire. The collected data were analyzed by descriptive statistics in Excel software (Microsoft).

The Research Ethics Committee (REC) received and approved this project (report number: 2,719,045). The confidentiality of the participants was maintained during all study procedures, both in the process of data collection and result analysis.

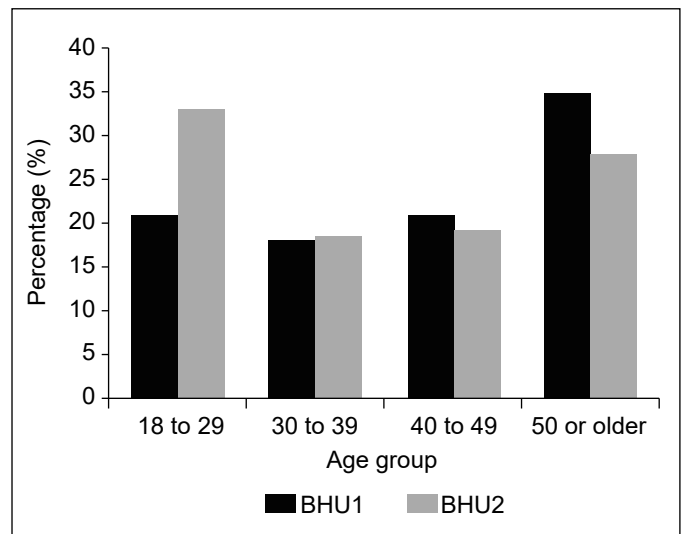
## RESULTS

The total of interviews conducted in both BHUs was 193: 95 in BHU1 and 98 in BHU2. Both BHUs showed a discreet predominance of female participants, with a prevalent age over 50 years (36.8%) in BHU1, and 18 to 29 years (33.6%) in BHU2 (**Figure 1**).

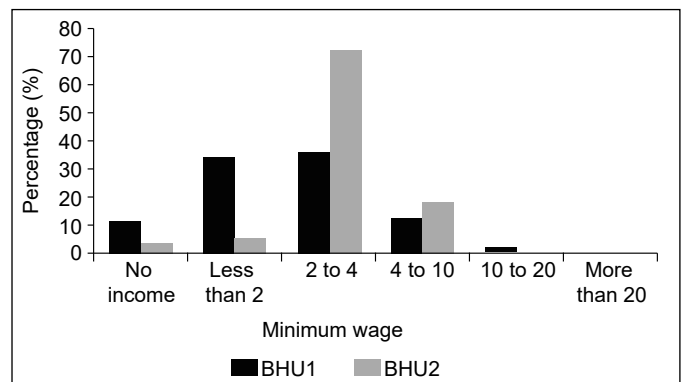
The prevalent household income was two to four times the minimum wage in the two BHUs; however, there was a significant difference in the percentages obtained, since 38% of patients from the first BHU indicated this income range, while in the second, it reached 73.4%. In addition, no participant from BHU2 declared 10 to 20 or over 20 times the minimum wage, unlike BHU1 (**Figure 2**).

Regarding schooling, most BHU2 patients declared having attended school for a longer period than the participants from BHU1 (**Figure 3**). However, no BHU2 patient reported ever attending school, unlike the results from BHU1.

When asked about the prevalent type of sexual partnership in the last 12 months, most BHU1 patients claimed not having a partner (48.83%) and 54% from BHU2 declared having only one steady partner. These data may corroborate the results on the use of condoms during sexual intercourse, as most patients from both BHUs answered not to use them.



**Figure 1** – Age group of research participants. BHU: Basic Health Unit.



**Figure 2** – Household income of research participants. BHU: Basic Health Unit.

With regard to syphilis, 65% of patients from both BHUs declared to know about the disease, and even though most of them have answered correctly about its means of transmission, more than 11% of BHU1 patients and almost 5% of those from BHU2 chose options not related to intercourse (Figure 4).

It is noteworthy that almost half of the patients (40%) did not know the main symptom in early syphilis (Table 1).

We found a significant difference regarding the knowledge about red spots appearing in the body after a period in the person with syphilis. Most BHU2 patients (95.9%) chose this option, while over 50% of those from BHU1 answered correctly (60%).

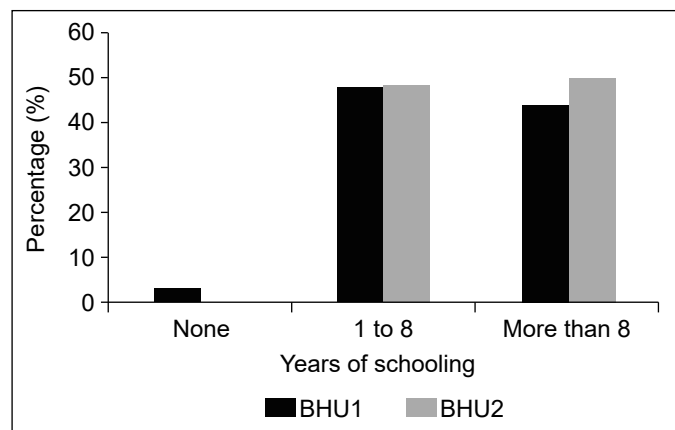


Figure 3 – Years of schooling of research participants. BHU: Basic Health Unit.

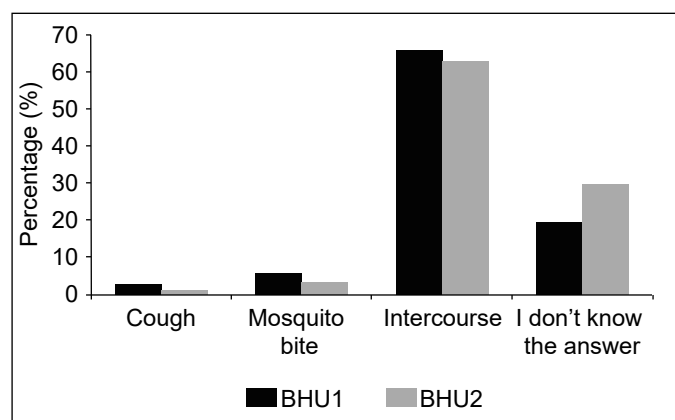


Figure 4 – Percentage of patients who selected means of syphilis transmission. BHU: Basic Health Unit.

Table 1 – Main symptom of early syphilis according to research participants.

Symptom	BHU 1 (%)	BHU 2 (%)
Diarrhea	3.2	2.0
Genital lesions	44.2	56.1
Night sweats	4.2	5.1
Cough	4.2	0
Does not know the answer	44.2	36.7

BHU: Basic Health Unit.

Most patients stated that syphilis can harm important organs, be transmitted to the newborn, and be treated in the public health system (SUS – *Sistema Único de Saúde*).

More than 50% of the participants never talked to their sexual partner about syphilis, justifying it by their trust in them. Shyness was a cause chosen by 15 and 27% of BHU1 and BHU2 patients, respectively (Figure 5).

Regarding the test for syphilis diagnosis in the last 12 months, 80% of BHU1 patients answered not having undergone any tests, more than half (64%) would like to undergo the rapid test and obtain information about the disease (89%), and 70% denied having received information from a doctor.

Similar results were found in BHU2, as even though most (90%) patients stated they would like to undergo the rapid test, 95% did not undergo syphilis tests in the last 12 months. Almost all participants (96%) would like to receive information about the disease, and most individuals in the district revealed they had not received information from their doctor about the subject (80%).

## DISCUSSION

Data analysis of the present study revealed that the BHU1 sample consisted of older people, with less education, and household income with more heterogeneous distribution compared to BHU2. This fact is relevant for health actions, which can be programmed according to the socioeconomic profile of people in each district. According to the Ministry of Health, the patients' level of understanding influences the perception of health dilemmas and the ability to grasp information concerning this disease, as well as the use of healthcare systems and acceptance of healing procedures. Besides, the lower the level of education and information, the more exposed people are to the succession of pathological states, making deficient the process of health promotion and disease prevention<sup>(8)</sup>.

Even with the difference in the distribution of household income among participants from both BHUs, the option 2 to 4 times the minimum wage had the highest percentage in the total sample of the study, indicating that access to health programs in these two districts of the city would be important, since low income restricts adequate and up-to-date information<sup>(9)</sup>.

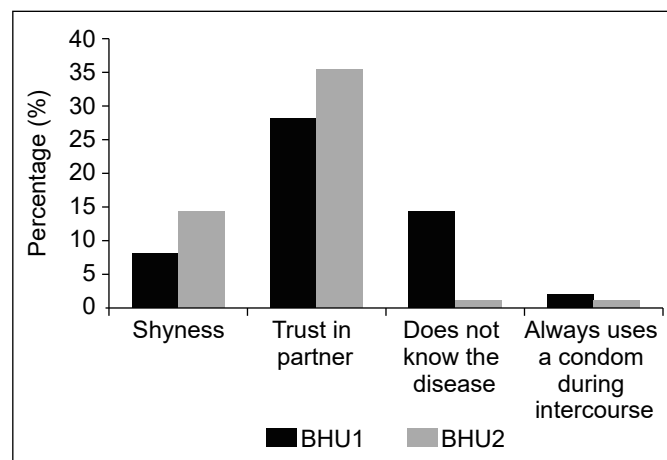


Figure 5 – Percentage of patients who have selected reasons for not talking about syphilis with their partner. BHU: Basic Health Unit.

Most BHU1 participants claimed to have only one steady sexual partner in the last 12 months, followed by those who revealed having no partners. However, BHU2 showed a prevalence of different sexual partners in the past six months, indicating that this district requires increased attention from health agencies to develop actions to prevent transmission of sexually transmitted infections (STIs).

We found little reference on the incidence of syphilis related to the number of sexual partners. In any case, condom use protects the most common contamination points, and reducing the number of sexual partners also decreases the risk of acquiring syphilis<sup>(10)</sup>. In addition, individuals who do not have steady partners constitute a group vulnerable to STIs, with increased difficulty in identifying and treating the partner concomitantly<sup>(11)</sup>.

The participants in this study who reported not using a condom during sex corresponded to the majority of the sample. Male or female condoms should be offered to and used by sexually active people as an effective method to reduce the risk of transmission of STIs, in addition to preventing pregnancy. Appropriate guidelines for the conservation and proper and regular use of male and female condoms must be part of the approach, as well as providing female condoms to increase the possibilities of prevention for women, considering the difficulties experienced mainly by sex workers in negotiating condom use with the sexual partner<sup>(12)</sup>.

It is important to observe that almost half of the participants could not answer what the main symptom in early syphilis is, and most of them claimed never having talked to their sexual partner about syphilis, justifying it by trusting them, followed by shyness. Lack of information about syphilis was notorious in this study. According to studies, even though syphilis is a disease that exists since antiquity, a very high percentage of men and women are not aware of it, which increases the risk of developing the infection, thus maintaining the transmission chain, requiring a rapid mobilization to increase the level of knowledge about this STI<sup>(13)</sup>.

We underline that knowledge about syphilis can help those infected to face the disease, minimizing negative feelings and the consequences of this problem in their lives. The lack of dialog about sexuality between couples influences their preventive attitudes, leading to conflicting moments, such as the diagnosis of some STIs<sup>(14)</sup>.

Most participants in this study know about the main means of syphilis transmission. Nonetheless, a fair amount of individuals from both BHUs chose the option "don't know the answer". In addition, half of the sample could not answer what the main symptom at the onset of this disease is, and identifying its clinical signs is essential for the patient to visit a doctor and start treatment to prevent the transmission of the bacteria. It became evident that although participants had answered what syphilis is, the correct knowledge about symptoms and prevention of the disease was still unsatisfactory. This fact can be aggravated by the lack of communication about syphilis with the sexual partner, as was the case with most participants. Knowing the general aspects of this disease is crucial to prevent possible systemic complications, such as blindness, paralysis, and brain damage, in addition to fetus transmission<sup>(15,16)</sup>.

Despite all the efforts of SUS (providing prenatal care, diagnostic tests, and treatment for pregnant women and partner), the incidence of congenital syphilis in Brazil remains high. According to the Ministry of Health<sup>(17)</sup>, the incidence rate of congenital syphilis

in 2016 was 6.8 cases for every 1,000 live births, which represents exactly 20,474 new cases of congenital syphilis in the country. The state of São Paulo had 5.8 new cases reported for every 1,000 live births, totaling 3,650 newborns infected in 2016<sup>(17)</sup>.

Most participants declared not having undergone any test for syphilis diagnosis in the past 12 months, and that they would like to undergo the rapid test and receive information about the disease since most deny having received information from a doctor. Therefore, actions aimed at disease control are necessary, including notification, active search actions, appropriate treatment, and follow-up for serologic proof of healing, so changes to fight the infection and promote a better quality of life can be proposed. Healthcare professionals have the important role of producing and clarifying information and encouraging families and patients about treatments and prevention of STIs.

We emphasize that the costs and benefits of syphilis prevention, based on primary care, are more favorable than treatment, reducing public expenditure and allowing the application of funds in other public health sectors through new investments<sup>(18)</sup>.

The difference in knowledge between patients from the two BHUs used for this research was evident. BHU1 participants showed less knowledge about syphilis, which can be explained by the higher mean age and shorter schooling period. Even though the distribution of household income was more heterogeneous, BHU1 patients were more susceptible to contamination by *Treponema pallidum*. Despite the main mean of transmission of this disease being correctly identified by a higher percentage of patients from BHU1 than BHU2, the unawareness about symptoms of primary and secondary syphilis raises concern, since nowadays the older population is more sexually active and, therefore, vulnerable to STIs, either for lack of knowledge or for the controversial nature of the subject among this age group<sup>(19)</sup>.

## CONCLUSION

We underline the lack of information and understanding among the participants in this study, given the severity this disease can reach. Also, we emphasize that people increasingly become carriers of the bacterium due to lack of prevention, even though the disease can be eliminated in a simple and easy way through the use of condoms, essential at every intercourse.

Reducing the incidence of syphilis will only be possible with the systematic adoption of more effective measures of prevention and control.

## Participation of each author

Antônio Lourenço Pires Neto and Melissa Carol da Silva participated in the design of the project; data collection, analysis, and interpretation; and article writing. Tatiane Iembo contributed to the conception of the project; data analysis and interpretation; article writing; critical review of intellectual content; and approval of the final version of the manuscript.

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## Conflict of interests

There is no conflict of interests to be reported.

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