

RESEARCH ARTICLE

NIVEL DE CONOCIMIENTOS EN GESTANTES SOBRE SÍFILIS GESTACIONAL EN UN HOSPITAL DE PRIMER NIVEL DE COMPLEJIDAD EN CÚCUTA –COLOMBIA.

KNOWLEDGE LEVEL IN PREGNANT WOMEN ABOUT GESTATIONAL SYPHILIS IN A FIRST LEVEL COMPLEXITY HOSPITAL IN CÚCUTA – COLOMBIA.

Diana Carolina Valencia Basto¹ , Robinson Damián Collantes Páez² 

Recibido: 15 de enero de 2025.

Aprobado: 15 de Marzo de 2025

RESUMEN:

Introducción: La sífilis gestacional es considerada como una de la principal causa de complicación materno perinatal; con consecuencias económicas, sociales y sanitarias de gran repercusión en los sistemas de salud del mundo. **Objetivo:** Determinar el nivel de conocimiento sobre sífilis en gestantes con diagnóstico de sífilis gestacional en un hospital de primer nivel de complejidad en Cúcuta – Colombia durante el primer semestre del año 2023. **Materiales y Métodos:** Estudio cuantitativo, descriptivo, de corte transversal, con una muestra de 40 gestantes con diagnóstico de sífilis gestacional; inscritas al programa de control prenatal. Se aplicó una encuesta sociodemográfica y el cuestionario: Grado de conocimiento de sífilis gestacional, basado en los Criterios Nursing Outcomes Classification (NOC). **Resultados:** El 23,5% tuvo un conocimiento escaso en la variable de control de la infección; determinado por los signos y síntomas (50,0%) y modo de transmisión

¹ Enfermera, especialista en administración de salud y magister en epidemiología. Fundación Universitaria Área Andina.

² Enfermero, magister en auditoria y sistemas de la calidad en servicios de salud. Universidad Simón Bolívar. robinsoncollantes@gmail.com

(75,0%). En la variable de mecanismos de prevención y tratamiento reporto un conocimiento escaso con un 36.8%, representado por los factores que contribuyen a la infección (67,5%), prácticas que reducen la infección (65,0%) y en la importancia de finalizar el tratamiento (57,5%). Por último; el 38,6% de las gestantes presentaron un conocimiento escaso en relación con la variable de control y seguimiento. **Conclusiones:** El nivel de conocimiento sobre sífilis en gestantes con diagnóstico de sífilis gestacional fue escaso; por tanto, toma relevancia optimizar los procesos de información, educación y comunicación para la salud materna.

PALABRAS CLAVE: Salud materna; Conocimiento; Mujeres embarazadas; sífilis; Enfermería.

ABSTRACT:

Introduction: Gestational syphilis is considered one of the main causes of maternal and perinatal complications, with economic, social and health consequences of significant impact on health systems worldwide. **Objective:** To determine the level of knowledge about syphilis in pregnant women diagnosed with gestational syphilis in a first level hospital in Cúcuta - Colombia during the first semester of the year 2023. **Materials and Methods:** Quantitative, descriptive, cross-sectional study, with a sample of forty pregnant women diagnosed with gestational syphilis; enrolled in the prenatal control program. A sociodemographic survey and the questionnaire: Degree of knowledge of gestational syphilis, based on the Nursing Outcomes Classification (NOC) criteria, were applied. **Results:** 23.5% had little knowledge in the infection control variable, determined by signs and symptoms (50.0%) and mode of transmission (75.0%). In the variable of prevention and treatment mechanisms, 36.8% reported poor knowledge, represented by the factors that contribute to infection (67.5%), practices that reduce infection (65.0%) and the importance of completing treatment (57.5%). Finally; 38.6% of the pregnant women presented poor knowledge in relation to the variable of control and follow-up. **Conclusions:** The level of knowledge about syphilis in pregnant women diagnosed with gestational

syphilis was low; therefore, it becomes relevant to optimize the processes of information, education, and communication for maternal health.

KEYWORDS: Maternal health; Knowledge; Pregnant women; syphilis; Nursing.

INTRODUCTION

Gestational syphilis is a bacterial infection caused by *Treponema pallidum*, with significant implications for both maternal and perinatal health (Instituto Nacional de Salud, 2015). It represents a major public health concern globally, adversely impacting the quality of life and contributing to increased rates of maternal and fetal morbidity and mortality within healthcare systems (Pan American Health Organization, 2019). Worldwide, the incidence of syphilis is estimated at approximately 12 million cases annually, with around 2 million occurring in pregnant women. Without adequate treatment, there is a 100% risk of vertical transmission, resulting in congenital syphilis in all affected newborns (Ospina-Joaqui et al., 2023).

In Colombia, data from the National Institute of Health (INS) reported a

total of 5,131 cases of gestational syphilis between epidemiological weeks 1 and 24 of 2022, corresponding to a prevalence of 17.2 cases per 1,000 live births and stillbirths (Edwin & Alvarado, 2022).

In 2023, during epidemiological weeks 1 to 39, 55% of territorial entities were found to exceed the national prevalence rate of gestational syphilis per 1,000 live births and stillbirths. The highest prevalence rates were observed in the departments of Arauca (41.9), Buenaventura (29.5), Chocó (25.2), Quindío (24.7), and Norte de Santander (24.6) (Instituto Nacional de Salud, 2023).

Given the significant epidemiological impact, Sexual and Reproductive Health has become a priority area of focus for the Colombian government. According to the World Health

How to cite this article: Cano-Barrios Allison, Huerta-González Sara, De La Hoz-Quintero Cristian, Montes-Mosquera Claudeth, De Arco-Castrillón Ángela, Characterization and Attitudes Towards Gender-Based Violence in Nursing Students in Colombia 2024. Revista Ciencias Básicas En Salud, 3(1):1-17. April 2025, ISSN 2981-5800.

Organization, pregnant women diagnosed with gestational syphilis often report having received substandard care within health systems, which severely limits the exercise of their sexual and reproductive rights (Instituto Nacional de Salud, 2015).

Among the risk factors associated with gestational syphilis, low educational attainment among pregnant women is identified as the most influential. Domingues and Leal (2016), in a study conducted in Brazil, found that lower levels of maternal education were significantly associated with higher rates of both syphilis and congenital syphilis. Additional contributing factors include limited or no access to prenatal care and screening, socioeconomic vulnerability, geographic isolation, and insufficient availability of healthcare services in the area of residence (Moreno Gómez, Moreno Gómez, & Colorado Barrios, 2024).

For nursing, the phenomenon under study is important, as a high

prevalence of gestational syphilis may indicate shortcomings in the provision of prenatal care services and the poor quality of health promotion and maintenance programs, particularly regarding sexually transmitted infections. The above highlights the need to implement educational strategies and continuous training for healthcare personnel, focusing on the ongoing improvement of both clinical and community nursing practices in maternal care.

METODOLOGY:

The present research was designed under a quantitative, descriptive, and cross-sectional approach. The study population consisted of 71 pregnant women reported to SIVIGILA with a diagnosis of gestational syphilis during the first half of 2023. The sample size was calculated using the OpenEpi software for proportions, applying the equation $n = [EDFFNp(1-p)] / [(d^2/Z^2_{1-\alpha/2}(N-1) + p^*(1-p))]$, considering the following parameters: population of 71

pregnant women, 95% confidence level, 5% margin of error, and an expected knowledge proportion of 50%. A non-probabilistic convenience sampling method was used.

The variables of interest were measured using the questionnaire “Degree of Knowledge on Gestational Syphilis: Infection Control, Transmission Mechanisms – Treatment and Control – Follow-up.” This instrument was based on the Nursing Outcomes Classification (NOC) Criteria (Moorhead et al., 2014). For the development of the study, the outcome “Knowledge: Infection Control” was used, which is included in Domain 04: Health Knowledge and Behavior, corresponding to Class S: Health Knowledge, and Pattern 06: Cognitive/Perceptual. The questionnaire comprised 11 Likert-scale items, with the following scoring interpretation: No knowledge (0%–20%), Limited knowledge (21.0%–40.0%), Moderate knowledge (41.0%–60.0%), Substantial knowledge

(61.0%–80.0%), and Extensive knowledge (81.0%–100%). The instrument demonstrated high inter-rater reliability (ICC > 0.70), good internal consistency (Cronbach’s alpha: 0.81), and a 95% confidence interval (Morilla-Herrera et al., 2011). It was validated by experts in Spanish and is of free use (Moorhead et al., 2014).

The instrument was applied in two ways: first, in person, with pregnant women invited to the institution’s facilities for its administration; second, via email, with an online response link sent. Data were analyzed using IBM® SPSS® Statistics software version 25 (IBM, 2019), licensed to the University of Pamplona, calculating frequency and percentage measures.

Talking about the ethical, bioethical, and scientific integrity considerations, this study was classified as risk-free, as it involved the use of questionnaires that did not cause any physical or emotional harm to the pregnant women, in accordance with Resolution 8430/1993 (Castillo Prof., 2012). The

study also received approval from the Hospital Medical Ethics Committee of E.S.E. IMSALUD. The informed consent process was carried out both in written and virtual formats, thereby respecting the autonomy and decision of each participant to take part in the study. Furthermore, participants were informed of their right to withdraw from the survey at any time, in full observance of their wishes.

RESULTS:

Regarding the sociodemographic characteristics, the study showed that 72.5% of the participants were in the

youth age range (18–28 years), with a minimum age of 16 years, a maximum of 37, an average age of 25 years, a median of 24, and the most frequently reported age being 29 years. In terms of nationality, the majority were Colombian (72.5%), followed by Venezuelan participants (27.5%). Concerning area of residence, 97.5% lived in urban areas. All participants (100%) were covered under the subsidized healthcare system, with 57.5% affiliated with Nueva EPS.

Regarding the knowledge of pregnant women about gestational syphilis (Table 2), the following results were observed:

Table 2: Pregnant women's knowledge of gestational syphilis

ITEM		No Knowledge (0-20)	Limited Knowledge (21-40)	Moderate Knowledge (41-60)	Substantial Knowledge (61-80)	Extensive Knowledge (81-100)
Infection Control						
Signs and symptoms		22,5% (9)	50% (20)	20% (8)	7,5% (3)	0% (0)
Mode of transmission		2,5 % (1)	75% (30)	20% (8)	2,5% (1)	0% (0)
Reinfection		62,5% (25)	10% (4)	17,5% (7)	7,5% (3)	2,5% (1)
Prevention and Treatment Mechanisms						

Factors contributing to infection	20% (8)	67,5% (27)	10% (4)	2,5% (1)	0 (0)
Practices that reduce infection	7,5 % (3)	65% (26)	27,5% (11)	0 (0)	0 (0)
Infection treatment	5% (2)	12,5(5)	22,5% (9)	32,5% (13)	27,5% (11)
Medication name	7,5% (3)	7,5% (3)	32,5% (13)	30% (12)	22,5% (9)
Adverse effects	32,5% (13)	55% (22)	10% (4)	0 (0)	2,5% (1)
Importance of completing the treatment	2,5% (1)	57,5% (23)	35% (14)	2,5% (1)	2,5% (1)
Control and follow up					
Infection follow up	20% (8)	35% (14)	37,5% (15)	7,5% (3)	0% (0)
Infection control procedure	27,5% (11)	42,5 % (17)	20% (8)	7,5% (3)	2,5% (1)

Source: Authors

Regarding the variable **infection control**, specifically the sub-variable signs and symptoms (such as genital ulcers, skin rash, plaques on the palms of the hands and soles of the feet, presence of fever, and weight loss), 50% of the participants demonstrated limited knowledge, while 22.5% showed no knowledge at all. Similarly, for the variable mode of transmission, knowledge was predominantly limited, with 75% of participants falling into this

category and only 20% exhibiting moderate knowledge.

Finally, regarding the sub-variable **reinfection**, 62.5% of the study population demonstrated no knowledge, particularly emphasizing the importance of treatment adherence and clinical and serological follow-up in accordance with the clinical practice guideline.

Concerning the variable **prevention and treatment mechanisms**, the evaluated sub-variables related to treatment showed that 32.5% of participants had substantial knowledge, recognizing the route of administration and the frequency of application, while 27.5% exhibited extensive knowledge. Regarding the **name of the medication**, 32.5% demonstrated moderate knowledge and 30% substantial knowledge. However, this variable also revealed knowledge gaps: 67.5% of the sample showed limited knowledge about factors contributing to infection such as having multiple sexual partners, failure to receive treatment, non-use of condoms, history of other infections, and sexual behavior, while 20% had no knowledge at all. Similarly, for practices that reduce infection—such as correct condom use, avoiding shared needles, and sexual abstinence—65% had limited knowledge, and 27.5% showed moderate knowledge. It is noteworthy that 55% had limited knowledge regarding the adverse effects of treatment for gestational syphilis.

Likewise, 57.5% showed limited knowledge about the importance of completing the treatment, which is linked to complications during pregnancy, while 35% demonstrated moderate knowledge.

Finally, in the variable **control and follow-up**, concerning the sub-variable **infection follow-up**, 37.5% of participants showed moderate knowledge related to treatment duration, laboratory tests, dual protection during sexual intercourse, and partner treatment. In relation to the **infection control procedure**, 42.5% exhibited limited knowledge according to the Likert scale scoring.

DISCUSSION:

This study involved the participation of 40 pregnant women diagnosed with gestational syphilis, enrolled in the prenatal care program of a first-level complexity hospital in Cúcuta, Colombia, during the first half of 2023. According to the sociodemographic characteristics, the population was

primarily composed of young women aged between 18 and 28 years. In this regard, Jauregui (Islado, 2018) in his research reported that the majority of cases involved women aged between 20 and 35 years, a finding that contrasts with the population group in the present study.

Regarding nationality, a study conducted in the Atlántico region (Ramirez, Rios Garcia, & Garcia, 2023) showed, similarly to this research, that most participants were Colombian, with a smaller percentage being Venezuelan. Likewise, in Cuba, a study by Yoania Cuñat and Ladron de Guevara (2020) found that all pregnant women resided in urban areas, a result comparable to that of the present study.

It is worth highlighting a study by Giraldo-Oliveros, Barco-Posu, and Montaña (2024), which demonstrated that socioeconomic and geographic conditions related to access to basic services lead to reduced use of health

services, with 70.2% of the population belonging to socioeconomic stratum II, a figure close to that reported in this study. Additionally, concerning the health insurance regime, the entire study sample was affiliated with the subsidized regime.

When maternal infection is not identified promptly and remains untreated during the early stages of pregnancy, the mother transmits the infection to the fetus (congenital syphilis), often resulting in adverse health outcomes (Pan American Health Organization, 2019). The study regarding knowledge about infection control reveals that half of the pregnant women had limited knowledge about the infection. It is noteworthy that 42% of the participating pregnant women were diagnosed during the second trimester, allowing for the initiation of treatment according to the established protocol and the corresponding follow-up.

On the other hand, a case study showed that lack of knowledge about the clinical manifestations of different

forms of syphilis during pregnancy by healthcare personnel can lead to delayed diagnosis (Rocío et al., 2019). Similarly, most participants demonstrated limited knowledge regarding the mode of transmission; this contrasts with a study conducted in Paraguay, where results showed that five out of ten pregnant adolescents were aware of syphilis, and five knew that it is transmitted through sexual intercourse (Evelyn Romero, 2024).

Consequently, a 2021 study concluded that pregnant women reported little knowledge about gestational syphilis and acknowledged that the infection is transmitted sexually (Silva et al., 2021). This finding aligns with the present study, where more than half of the pregnant women with syphilis had no knowledge about reinfection. This converges with an article indicating that a very small sample of the studied population experienced reinfection with gestational syphilis (P, M A, and L, 2023).

Regarding the mechanisms of prevention and treatment of the infection, the study results showed that the majority of pregnant women possessed limited knowledge about the factors contributing to infection. This finding is similar to that reported in Uruguay (Salas-Romero et al., 2020), where a significant percentage of women with gestational syphilis were either unaware of or had not undergone study or treatment of their sexual partners.

Conversely, research conducted in Ecuador identified the determinants for the prevalence of syphilis in pregnant women as incomplete or inadequate treatment, age, poverty, and unprotected sexual relations (Segovia and Parrales, 2022). Likewise, Moreno specifies that insufficient education among pregnant women with syphilis weakens their negotiation capacity regarding sexual relations and the use of protection; additionally, it limits access to health services due to a lack of perception about the infection

(Moreno Gómez, Moreno Gómez, and Colorado Barrios, 2024).

On the other hand, the majority of the studied population demonstrated limited knowledge about practices that reduce infection, which compromises healthy self-care behaviors during pregnancy. Similarly, a thematic review shows that part of the pregnant population is unaware of different sexually transmitted infections, which can negatively impact fetal health, as well as the importance of using barrier methods during pregnancy (Jasser S. Castro D., 2020).

Additionally, Maciel points out that studies indicate preventive measures such as sexual abstinence and condom use—especially within the context of monogamous relationships, aimed at protecting the fetus from infections—were not widely accepted by pregnant women and their partners (Gabriella Maciel Elias et al., 2023).

Regarding treatment, one-third of the study sample demonstrated substantial knowledge, contrasting with a 2020 study (Fernández and Martens, 2020) that reported half of the pregnant women correctly completed the treatment for gestational syphilis. In this investigation, moderate knowledge was observed concerning the name of the medication.

Moreover, it is noted that the treatment of choice is penicillin, administered intramuscularly (Cañero, Mejías, and Marta Rosario Gómez Díaz, 2022). It is also important to highlight that half of the study participants showed limited knowledge about the adverse effects of the treatment, which can lead to non-compliance and an increased risk of reinfection. Similarly, the majority of the pregnant women had limited knowledge regarding the importance of completing the treatment. In relation to this, an article published in 2023 indicates that one of the conditions associated with treatment failure in gestational syphilis is the pregnant

woman's lack of knowledge about the disease (Rosa et al., 2023).

Regarding the control and follow-up of the infection, a 2019 study revealed that healthcare professionals were unfamiliar with the Clinical Practice Guideline (CPG) for the management and control of gestational syphilis. Similarly, they demonstrated limited knowledge in health promotion and moderate knowledge regarding patient follow-up (Valderrama, 2022), which may ultimately influence the knowledge that pregnant women acquire during care. This contrasts with the present study, where pregnant women showed limited knowledge about the importance of such follow-up and control.

In this context, Oreamuno (2021) conducted a case report and analysis describing a patient who received treatment, experienced a reduction in symptoms, and underwent laboratory follow-up that showed non-reactive results. It is therefore important to

highlight that clinical and serological follow-up of patients is crucial, with the primary objective of detecting possible relapses and/or reinfections.

Meanwhile, a 2020 study in Bolívar examined the knowledge, competence, and practices regarding the CPGs for comprehensive management of gestational syphilis among healthcare professionals. The study concluded that it is essential to intensify training strategies for healthcare personnel, with particular emphasis on nursing staff, and urgently empower this group in activities related to syphilis control (Salas-Romero et al., 2023).

CONCLUSIONS:

The study allowed for the identification that pregnant women with gestational syphilis had limited knowledge about the signs, symptoms, and mode of transmission, but particularly lacked awareness regarding the possibility of reinfection. However, a noteworthy

finding was the scarce knowledge about the factors that contribute to the infection and the practices that help reduce it. It is important to highlight that, although the participants demonstrated moderate knowledge about the treatment and the name of the medication, their understanding of

the adverse effects and the importance of completing the treatment was limited. Therefore, the insufficient knowledge about gestational syphilis becomes a significant healthcare challenge within the maternal-perinatal population.

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How to cite this article: Cano-Barrios Allison, Huerta-González Sara, De La Hoz-Quintero Cristian, Montes-Mosquera Claudeth, De Arco-Castrillón Ángela, Characterization and Attitudes Towards Gender-Based Violence in Nursing Students in Colombia 2024. *Revista Ciencias Básicas En Salud*, 3(1):1-17. April 2025, ISSN 2981-5800.

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