

HOSPITAL INFECTIONS IN THE POST-PARTUM PERIOD: A LITERATURE REVIEW OF THE MAIN RISK FACTORS, PREVENTION, AND INTERVENTION

Mikaelly Duarte de Oliveira¹

Amanda da Silva Souza²

Suzanne Parreira Rodrigues³

Tainara Tatila Fernandes⁴

Bruno Henrique da Silva⁵

Evangelical University of Goiás – UniEVANGÉLICA¹²³⁴⁵

ABSTRACT

Postpartum infections are quite common and pose a serious risk to maternal life and health, contributing significantly to maternal mortality rates in Brazil and worldwide. The objective of this study is to conduct a literature review to identify the main risk factors associated with postpartum hospital infections, in addition to evaluating evidence-based prevention and intervention strategies to improve maternal health and the quality of hospital care. This is a narrative literature review study. The search will be conducted in the Scientific Electronic Library Online (SciELO), Latin American and Caribbean Health Sciences Literature (LILACS), Scientific Evidence in Health in Latin America and the Caribbean (BIREME/PAHO/WHO), and PubMed, as well as academic repositories and manuals from the Ministry of Health, published in full between 2019 and 2024. The results indicate that risk factors such as cesarean sections, prolonged rupture of membranes, and inadequate aseptic practices are determinants of postpartum hospital infections. It is concluded that collaboration among health professionals in the prevention of postpartum infections is of paramount importance for developing and applying effective prevention strategies and implementing these essential measures to reduce the incidence of puerperal infections and improve maternal health in the postpartum period.

Keywords: Risk factors; Hospital infections; Intervention; Postpartum; Prevention.

INTRODUCTION

Healthcare-associated infections (HAIs) are important causes of death and morbidity, which significantly compromise the entire healthcare system, generating negative impacts and social and economic repercussions (Souza *et al.*, 2021). Annually, in the United States (US), approximately 2 million cases of HAIs are reported, resulting in approximately 80,000 deaths. In Europe, 4 million people are infected with HAIs every year (Portella, 2021).

In Brazil, the situation is also worrying. According to the World Health Organization (WHO), SARI affects 16 to 37 out of every 1,000 patients. The Brazilian

1 Graduate student in Nursing, Evangelical University of Goiás, Email: mikaellyduarteoliveira124@gmail.com

2 Graduate student in Nursing, Evangelical University of Goiás, Email: amandasooouzaq@gmail.com

3 Graduate student in Nursing, Evangelical University of Goiás, Email: suzanneparreira25@gmail.com

4 Graduate Student, Nursing Program, Evangelical University of Goiás, Email: tainaratatila74@gmail.com

5 Specialist Professor, Nursing Course, Evangelical University of Goiás, Email: bruno.silva@docente.UniEvangelica.edu.br

Health Regulatory Agency (ANVISA) estimates that the average hospital infection rate (HIR) in the country is 9% and the fatality rate is 14.35% of infected patients. SHAls are one of the most pressing health problems today (Portella, 2021). According to Batista *et al* (2019), postpartum hospital infections (PPHIs) are a major concern, as the risk of contracting infections in hospital settings increases during this delicate period.

Souza (2022) reports that the incidence of PHI is influenced by a number of factors, ranging from individual patient characteristics to institutional practices. In Brazil, where 57.2% of births are cesarean sections, understanding these factors is important for developing effective prevention strategies (Brazil, 2022). Santos and Carvalho (2022) point out that the prevention of PPI requires a diversified approach and rapid and effective interventions to reduce its impact. The prevalence rate of puerperal infections (PI) in Brazil varies from 1% to 7.2%.

Thus, this study aims to conduct a literature review to identify the main risk factors associated with PPI, in addition to evaluating evidence-based prevention and intervention strategies to improve maternal health and the quality of hospital care.

METHODOLOGY

The methodology used was a narrative literature review. The search was conducted through online access to scientific articles published in full between 2019 and 2024, using the following scientific databases: *Scientific Electronic Library Online* (SciELO), Latin American and Caribbean Health Sciences Literature (LILACS); Scientific Evidence in Health in Latin America and the Caribbean (BIREME/PAHO/WHO) and PubMed. Academic repositories and manuals from the Ministry of Health will also be consulted.

RESULTS

The postpartum period, which runs from the first to the sixtieth day after delivery, is divided into three phases: immediate, late, and remote. It is an essential period for closely monitoring women's health due to possible puerperal infections, characterized by fever above 38°C. These infections are the third leading cause of maternal mortality, accounting for 1-10% of deaths (Nunes *et al.*, 2024). The WHO defines PI as any maternal infectious process caused by bacteria from the female genital and extragenital tract, which can occur up to 42 days postpartum. Symptoms

include fever, pelvic pain, delayed uterine involution, and abnormal vaginal discharge, as well as surgical wound infections (Nunes *et al.*, 2024).

However, the main pathogens responsible for these infections include bacteria such as group B Streptococcus, Escherichia coli, Klebsiella pneumoniae, and Staphylococcus aureus (Santos, 2023). Cesarean sections pose a three times higher risk of obstetric complications than vaginal deliveries. In particular, cases of late or prolonged labor, premature birth, prolonged rupture of the amniotic membranes, multiple vaginal examinations during labor, primiparity, cesarean section in multiple pregnancies, and advanced maternal age increase the risk of PI (Pacheco *et al.*, 2023).

In addition, Souza *et al.* (2022) mention that factors such as diabetes, hypertension, obesity, anemia, poor asepsis conditions, excessive vaginal manipulation, and poor hygiene, among others, contribute to the development of PI. Early identification and immediate treatment are essential to prevent maternal mortality. It is estimated that about 5 to 7% of women develop some form of PI, accounting for 10 to 15% of maternal deaths globally. The WHO ranks PI among the five leading causes of maternal mortality worldwide. In Brazil, it is the third leading cause of maternal death, accounting for 73% of deaths from direct obstetric causes (Santos, 2023).

Endometritis emerges as the most prevalent of the PIs, affecting the endometrium, especially in the area previously occupied by the placenta (Carvalho, *et al.*, 2022). Parametritis is a condition involving inflammation of the tissue surrounding the uterus, while adnexitis covers infections of the ovaries and fallopian tubes, the latter being more common. Septic pelvic thrombophlebitis (SPT) is a rare puerperal complication, and other infections, such as urinary tract infection (UTI) and primary laboratory-confirmed bloodstream infection (PLBSI) (Moldenhauer, 2022).

Identifying these risk factors is essential for implementing preventive strategies and improving maternal health (Sousa *et al.*, 2022). Nunes *et al.* (2024) report that the prevention of PI in hospital settings requires an approach that includes adequate hygiene measures, education, prevention protocols, maintenance of a clean and safe environment, and collaboration between healthcare professionals and patients. These strategies can significantly reduce the incidence of PI and promote the health and well-being of postpartum women.

PIs require rapid and effective interventions to minimize complications and promote women's recovery (Araújo; Oliveira, 2023). For Araújo *et al.* (2019), a fundamental intervention in the treatment of postpartum infections is regular clinical assessment of the patient. In this context, Batista *et al* (2019) reveal that nurses play an essential role in reducing postpartum complications by supervising their team and ensuring that everyone is properly trained. This includes providing training and continuing education for healthcare staff, promoting effective and consistent communication.

CONCLUSION

PPIs represent one of the most serious complications that can occur after birth, with significant impacts on the health of mothers, as they increase the risk of serious complications and, in extreme cases, can lead to maternal death. It is important to emphasize the importance of collaboration among health professionals in the prevention of postpartum infections. This involves cooperation between obstetricians, nurses, infection control specialists, and other health professionals to develop and implement effective prevention strategies. In addition, the active participation of postpartum women and their families in the planning and implementation of preventive measures is essential to ensure the success of these strategies.

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