

ORIGINAL

## Evaluation of Variables Associated with the Prevalence of Cesarean Sections: A Study at Evita Pueblo Hospital

### Evaluación de Variables Asociadas a la Prevalencia de Cesáreas: Un Estudio en el Hospital Evita Pueblo

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#### ABSTRACT

**Introduction:** caesarean sections are surgical procedures in obstetrics that can save the lives of mothers and newborns in medically indicated cases. However, they are very frequently performed without medical justification, putting the health of women and their babies at risk. The international community has established that the ideal rate of caesarean sections should be between 10 % and 15 % of the population. The caesarean section rate in Argentina averaged 34,7 % according to the Perinatal Information System in 2017, with an increase of 23 % from 2010 to 2017.

**Method:** a retrospective study was carried out based on a review of clinical cases of caesarean sections performed over a period of six months in the obstetrics and gynaecology department of the Evita Pueblo hospital. Data was collected from clinical records and comparative variables were analysed. Data analysis included descriptive and analytical statistical methods.

**Results:** during the study, a caesarean section rate of 43,5 % was observed out of a total of 802 deliveries, with a higher prevalence in women aged 20 to 35 and in those in a stable relationship. The majority of newborns weighed between 2500 and 4000 grams, and 90 % of the caesarean sections were performed on pregnancies of more than 37 weeks.

**Conclusion:** the findings suggest a high caesarean section rate compared to international standards, highlighting the influence of demographic and obstetric factors in the choice of this type of delivery. Further research is needed on the subject, as there is little information in similar contexts, and institutional practices should be evaluated to optimize the use of this intervention.

**Keywords:** Cesarean Section; Prevalence; Healthcare Disparities; Medical Records; Retrospective Studies.

#### RESUMEN

**Introducción:** la cesárea es una intervención quirúrgica en obstetricia que puede salvar vidas maternas y neonatales en casos indicados médicamente. Sin embargo, muy frecuentemente se realizan sin justificación médica, poniendo en riesgo la salud de mujeres y de sus bebés. La comunidad internacional estableció que la tasa ideal de cesáreas debe situarse entre el 10 % y el 15 % de la población. La tasa de cesáreas en Argentina se ubicó en un promedio del 34,7 % según el Sistema Informático Perinatal en el año 2017, donde además se observó un incremento del 23 % desde el año 2010 al 2017.

**Método:** se realizó un estudio retrospectivo basado en la revisión de casos clínicos de cesáreas realizadas durante un período de seis meses en el servicio de Tocoginecología del hospital Evita Pueblo. Los datos

se recopilaron a través de los registros clínicos y se analizaron variables comparativas. El análisis de datos incluyó métodos estadísticos descriptivos y analíticos.

**Resultados:** durante el estudio se observó una tasa de cesáreas del 43,5 % sobre un total de 802 partos, con una mayor prevalencia en mujeres de 20 a 35 años y en aquellas en una unión estable. La mayoría de los recién nacidos presentó un peso de entre 2500 y 4000 gramos, y el 90 % de las cesáreas se realizaron en embarazos mayores a 37 semanas.

**Conclusión:** los hallazgos sugieren una tasa de cesáreas elevada en comparación con los estándares internacionales, destacando la influencia de factores demográficos y obstétricos en la elección de este tipo de parto. Es necesario seguir investigando sobre el tema, dado que existe poca información en contextos similares, y evaluar prácticas institucionales para optimizar el uso de esta intervención.

**Palabras clave:** Cesárea; Prevalencia; Desigual en Atención Médica; Historias Clínicas; Estudios Retrospectivos.

## INTRODUCTION

The cesarean section is the removal of the fetus through an incision in the walls of the abdomen and uterus. It is an alternative surgical procedure to the natural birth route, reasonably safe for both the mother and the fetus. However, complications are not always foreseeable or avoidable, such that there is evidence that birth by cesarean section is associated with complications ranging from 12 to 15 %.<sup>(4)</sup> Ideally, cesarean sections should be performed only when medically necessary.<sup>(5)</sup>

Since 1985, the international community has considered that the “ideal rate” for cesarean sections should range between 10 % and 15 %.

In Argentina, an obstetric consensus was reached on cesarean section on demand or cesarean section at the request of the pregnant woman, with emphasis on the counseling of the medical professional to the pregnant woman to make explicit the benefits and harms of cesarean section for the mother and the fetus and to establish informed consent.

Given the notable increase in cesarean sections, the need arises to examine whether some variables are significantly associated with the frequency of cesarean sections. This study aims to address this relationship in a public hospital setting, exploring possible factors and seeking a better understanding of the determinants of cesarean sections in this setting.

For this purpose, different variables were evaluated in the Obstetrics and Gynecology service of the Evita Pueblo hospital over a six-month period, providing data that will allow a better understanding of the phenomenon and contribute to more informed strategies for decision-making in obstetric care.

Is there a significant association between certain clinical, social, or institutional variables and the frequency of cesarean sections in the public hospital setting of the Evita Pueblo Hospital?

**Objective:** to analyze the relationship between several variables and the frequency of cesarean sections in the Tocogynecology service of the Evita Pueblo Hospital to identify possible determinants and contribute to developing informed strategies for obstetric care in the public setting.

## METHOD

This study used an observational, retrospective, descriptive design based on clinical case review. Data were collected from clinical records of patients who underwent cesarean sections in the Tocogynecology service of the Evita Pueblo Hospital from January 1 to June 30, 2023.

The study population included all patients older than 14 years who had a cesarean section at the hospital during the research period. Inclusion criteria were women with gestational age greater than 22 weeks at the time of intervention and fetal weight greater than 500 grams. Cases of vaginal delivery and cases without complete registration were excluded.

The variables studied included epidemiological and obstetric factors such as maternal age, marital status, fetal weight, and gestational age. Each variable was defined as follows:

*Maternal age:* categorized into three groups (younger than 19 years, between 20 and 35, and older than 35).

*Marital status:* classified as single, married, or in a stable union.

*Fetal birth weight:* recorded in kilograms, classified as less than 800 grams, 801 to 1500 grams, 1501 to 2499 grams, 2500 to 4000 grams, and greater than 4000 grams.

*Gestational age:* measured in less than 37 weeks of gestation and greater than 37 weeks of gestation.

Data were analyzed using descriptive and analytical statistical methods. The variables were expressed in percentages and frequencies. Cesarean section rates were calculated over total deliveries, and analyses were performed to evaluate the association between demographic and obstetric variables.

## RESULTS

Of the total number of deliveries (802), 56 % were vaginal deliveries (453) and 44 % were cesarean deliveries (349) (figure 1).

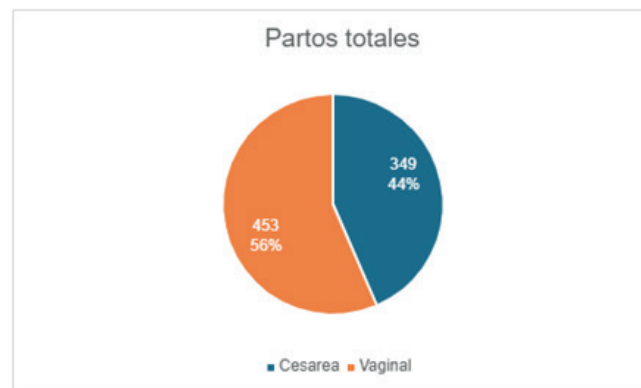


Figure 1. Percentage of total deliveries.

Of the total number of cesarean sections (349), 98,28 % were live newborns (343) and 1,72 % were deceased newborns (6) (figure 2).

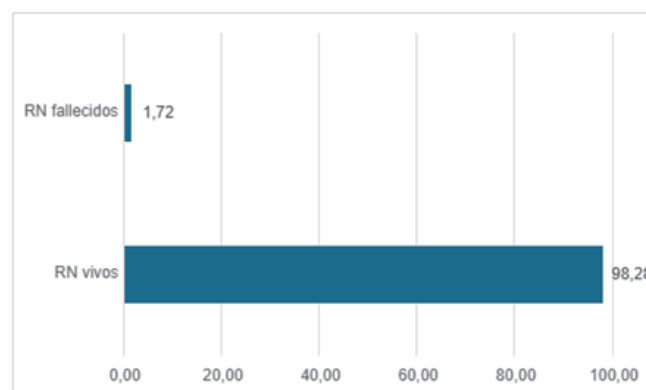


Figure 2. Percentage of live newborns.

The majority of patients (247) were in a stable union 70,8 %, while 20,9 % were single (73) and 8,3 % were married (29) (figure 3).

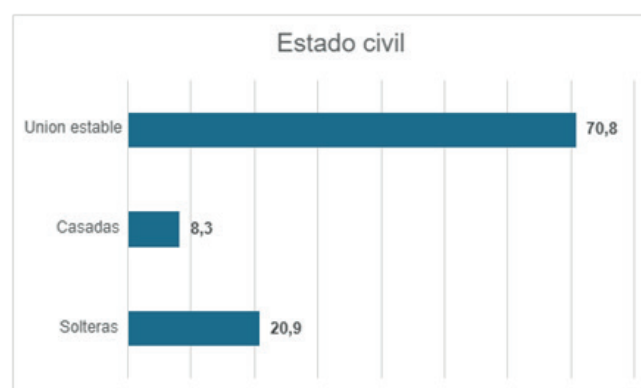


Figure 3. Distribution of pregnant women according to marital status.

Among the patients who had a cesarean section, 10,3 % were between 14 and 19 years old (36), 74,2 % were in the 20 to 35 age group (259), and 15,5 % were over 35 years old (54) (figure 4).

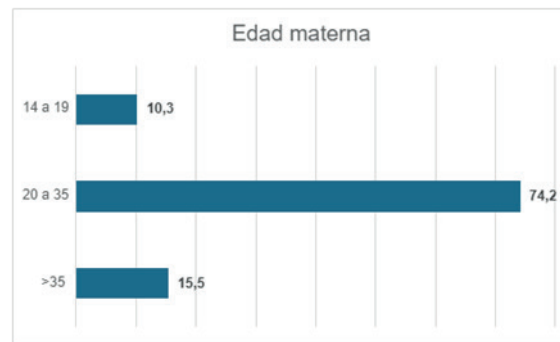


Figure 4. Distribution of pregnant women according to age.

Regarding gestational age, 90 % of cesarean sections were performed in women with a gestation of more than 37 weeks (314), while 10 % of cesarean sections were in pregnancies of less than 37 weeks (35) (figure 5).

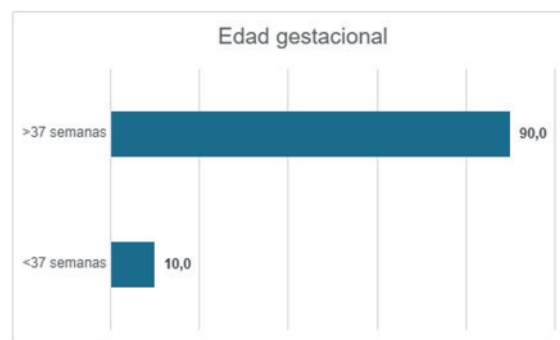


Figure 5. Gestational age result of newborns.

The weight of the newborns at the time of cesarean sections was distributed as follows: 0,57 % weighed less than 800 grams; 2,29 % were between 801 and 1500 grams; 9,45 % were between 1501 and 2499 grams; 74,50 % were between 2500 and 4000 grams; and 13,18 % had a weight greater than 4000 grams (figure 6).

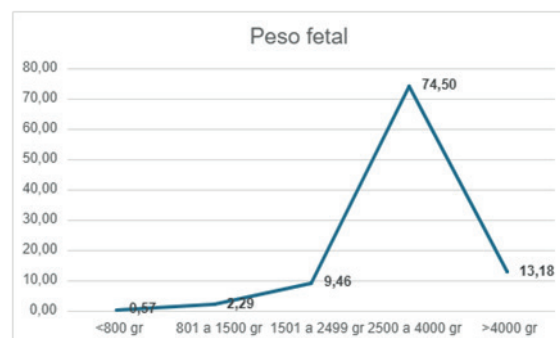


Figure 6. Fetal weight distribution.

## DISCUSSION

The cesarean section rate observed in this study was 43,5 %, notably higher than the range recommended by the WHO of 10 % to 15 %. This coincides with national and international studies that report that in recent years, there has been an increase in the number of cesarean deliveries in all countries, sometimes without clear medical indication and without taking into account the risks for both mother and newborn.<sup>(7)</sup>

According to information from Vital Statistics and the Perinatal Information System (SIP/SIP Gestión) of the National Ministry of Health, the rate of cesarean births has sustained increased, both in the public sector, where it is currently around 30 % and in the social security subsector, where it exceeds 61 %, with wide variations between jurisdictions in both cases.<sup>(8)</sup>

The most common maternal ages in our study (20-35 years) are also associated with higher cesarean section rates in the literature, possibly due to the low frequency of events, making the absolute risk associated with cesarean sections low. Still, even this low risk is substantially higher when compared to spontaneous vaginal deliveries.<sup>(9)</sup>

A limitation of the study is that it focuses on cesarean sections without information on specific medical indications, which precludes identifying whether the procedures were justified by obstetric risks.

In addition, reliance on retrospective data limits accuracy, as medical record reviews may omit relevant details not recorded in the records.

As noted at the Conference on Maternal Request Cesarean Delivery (NIH, USA, 2006), where the available literature and expert opinions were reviewed, the existing information does not provide a sufficient basis for recommending one mode of delivery over the other when comparing the risks and benefits of maternal request cesarean delivery and planned vaginal delivery.<sup>(10)</sup>

The study contributes to the knowledge about the factors associated with high cesarean section rates in a public hospital setting in Argentina, specifically by identifying demographic and obstetric patterns that characterize patients undergoing this type of intervention.

This analysis highlights the need to review institutional practices and protocols regarding the choice of cesarean section to understand the reasons for this trend and propose and implement effective measures to reduce or increase cesarean section rates where necessary.<sup>(11)</sup>

Future studies should focus on obtaining detailed information about the medical indications leading to the choice of cesarean section to gain a more comprehensive understanding of the determinants of cesarean section.

## CONCLUSIONS

The present study made it possible to analyze various factors associated with the frequency of cesarean sections at the Evita Pueblo Hospital over six months in 2023. A cesarean section rate of 43,5 % was found, a figure far exceeding the ideal range of 10 % to 15 % suggested by the World Health Organization. This result is in line with national and international trends that warn about the sustained increase in the number of cesarean sections, many of them performed without clear medical indication.

Through the analysis of variables such as maternal age, marital status, fetal weight, and gestational age, specific recurrent patterns were identified among the pregnant women who underwent cesarean section. Most of the patients belonged to the 20-35 years age group and were in a stable union. Also, the vast majority of births occurred at a gestational age greater than 37 weeks and with fetal weights within the normal range, indicating that most cesarean sections were performed in term pregnancies without clear evidence of serious neonatal complications.

Although the study provides relevant data for local analysis of the phenomenon, a significant limitation was the lack of specific information on the medical indications that justified each procedure. This absence prevents us from assessing whether the cesarean sections were clinically based or whether they responded to other institutional, social, or cultural factors. In addition, being a retrospective study, the reliance on medical records may have affected the accuracy of the data collected.

Despite these limitations, the paper highlights the need for a critical review of obstetric practices in the public hospital setting. The choice of the route of delivery should be based on clear medical criteria, always seeking the well-being of the mother and the newborn. Strengthening prenatal counseling, promoting respectful childbirth, and encouraging informed decision-making on the part of pregnant women is essential.

Finally, it is recommended that future studies include detailed information on the specific indications for cesarean sections and qualitative research that explores the perceptions of professionals and patients. Only through a comprehensive approach will it be possible to fully understand the determinants of cesarean sections and move towards safer, more equitable, and evidence-based practices.

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#### CONFLICT OF INTEREST

None.

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