

# SOCIODEMOGRAPHIC AND OBSTETRIC CHARACTERIZATION OF WOMEN UNDERGOING INTRAPARTUM CESAREAN SECTION IN A PUBLIC MATERNITY HOSPITAL IN GOIÂNIA

ANA LYDIA MELO DE GODOY OLIVEIRA <sup>1</sup>, WALDEMAR NAVES DO AMARAL <sup>2</sup>

## ABSTRACT

**INTRODUCTION:** In Brazil, delivery and birth assistance is permeated by excesses of obstetric and neonatal interventions in a routine and indiscriminate manner, resulting in unfavorable perinatal outcomes. For example, cesarean section or obstetric delivery, considered an intervention procedure that aims to ensure the safety of the mother and the fetus. It consists of a medical surgical act, through an incision of the abdominal and uterine wall followed by the removal of the fetus and placenta. However, changes have been observed in terms of objectives, indications and complications.

**OBJECTIVES:** To characterize the sociodemographic and obstetric profile of parturients who underwent intrapartum cesarean section.

**METHODS:** This is a cross-sectional, exploratory, descriptive, retrospective and quantitative study, with secondary data collection.

**RESULTS:** This study revealed a prevalence of women who underwent intrapartum cesarean section with a mean age of 24.1 years, with a predominance of the age group of 19 to 34 years, which represents 83.1% of the studied population and a small portion (12.4 %) were 18 years old or younger. Most were non-white (48.7%), with an average of 10.2 years of study, without formal work (76%), with low income (57.3%) and who lived without a partner (76.4%) , as stated in the registration form and Declaration of Live Birth attached to the physical record. It is worth noting that 48.3% of women belonged to the surrounding cities, given that the maternity in question is a reference for the State of Goiás in maternal and child care. Regarding the obstetric profile, most women were between 37 weeks and 40 weeks and 6 days old, characterizing term pregnancy. Also, 84% of them had prenatal care, in which 66.6% attended 6 times or more. Regarding parity, there was a prevalence of primiparous women, that is, women experiencing their first pregnancy. Although 86.5% of women received some non-pharmacological method that facilitates labor, such as bathing in warm water, Swiss ball, and freedom of deambulation, 46.1% were exposed to intravenous oxytocin. In the study, 78 (87.6%) of the newborns were born with an Apgar of 1 minute of life greater than or equal to 7 and 11 (12.4%) with Apgar less than 7. It is noteworthy that the majority of women in this study did not present comorbidities, totaling 71.9% of the studied sample.

**CONCLUSION:** There was a prevalence of women aged between 19 and 34 years old, the majority being non-white, with an average of 10.2 years of study, without formal work, low income and who lived without partner, concluding that the unfavorable socioeconomic level, low education and marital instability appear related to cesarean indications. Regarding the obstetric profile, it was possible to observe that most were in term pregnancy, attended prenatal care, had no comorbidities and that there was a greater indication in primiparous women. The prevalence of indications for intrapartum cesarean section was the progression arrest.

**KEYWORDS:** INDICATION. CESAREAN SECTION. INTRAPARTUM.

## INTRODUCTION

In Brazil, delivery and birth assistance is permeated by excesses of obstetric and neonatal interventions on a routine and indiscriminate basis, resulting in unfavorable perinatal outcomes<sup>1,2</sup>. For example, cesarean section or obstetric delivery, considered an intervention procedure that aims to ensure the safety of the mother and the fetus. It consists of a medical surgical act, through an incision of the abdominal and uterine wall followed by the removal

of the fetus and placenta. However, changes have been observed in terms of objectives, indications and complications<sup>3</sup>.

Despite obstetric progress, there has been a significant increase in cesarean rates in the world in recent decades, especially in Brazil. Cesarean sections have become the most frequent delivery life, reaching 85% of deliveries performed in private health services and 40% in the Unified Health System (SUS)<sup>10</sup>. The World Health Or-

1- Hospital e Maternidade Dona Iris  
2- Universidade Federal de Goiás



## ENDEREÇO

PATRÍCIA GONÇALVES EVANGELISTA  
Alameda Emílio Póvoa, 165 - Vila Redenção  
Goiânia - GO, 74845-250  
E-mail centrodeestudosdmi@gmail.com

ganization has developed an acceptable rate of cesarean deliveries of 10% to 15%, based on the results of cesarean deliveries in countries with lower rates of maternal and neonatal mortality. Considering that the countries studied were developed, the recommendation of up to 15% of cesarean sections was applied for countries with a low degree of development, due to the greater probability of pregnant women with higher obstetric risks<sup>5,6</sup>.

The Brazilian scenario regarding obstetric delivery is on the rise, with high growth in all regions. In 2018, the national index of cesarean deliveries reached 55%, occupying the second position in the ranking of countries with the highest rates of cesarean sections in the world, alarming data especially when compared to developed countries such as Sweden (17%) and the United States (26%)<sup>7,9</sup>.

The justifications for the increasing rate are varied, the advancement of medicine added to surgical practices and access to more complex assistance are factors that contribute to the increase in cesarean sections<sup>8</sup>. The rise of this surgical procedure requires the attention of health professionals in charge of perinatal care, since maternal morbidity increases twice in women undergoing intrapartum cesarean section when compared to vaginal delivery. In the case of elective cesarean section, this morbidity increases three times, leading to a longer hospital stay and greater chances of mortality after discharge<sup>10</sup>.

The indications for cesarean sections are broad and all include the impossibility of vaginal delivery or a high risk for the mother or the fetus. They may indicate conversion of the delivery route in parturients: pelvic cephalopathic disproportion, including poor fetal position and anomalous presentation, premature placenta, diagnosed vasa previa, cord prolapse, failure to progress<sup>3,11</sup>.

It is also known that cesarean sections without indications are related to higher chances of puerperal infection, maternal morbidity and mortality, neonatal mortality, and higher costs for the health system. Investigating the factors related to this growing practice of cesarean deliveries is important so that strategies can be developed and implemented<sup>12,13</sup>.

Given the above, it was considered relevant to analyze the clinical indications pointed for the need of intrapartum cesarean, as well as the associated sociodemographic and obstetric factors, in a public maternity of reference of the State of Goiás, located in Goiânia.

**METHODS**

This is a cross-sectional, exploratory, descriptive, retrospective and quantitative study, with secondary data collection. The research was carried out at the Obstetric Center of the Hospital and Maternidade Dona Iris, of local public nature, located in Goiânia, Goiás.

The variables used were: age (in years); years of study, occupation (has a job versus no work), self-declared race (white versus non-white), marital status (lives with a

partner versus lives without a partner), income (in reais), religious practice (no versus yes), type of housing (own or non-own), physical activity (yes or no), previous comorbidities (yes versus no), use of medications (yes versus no), use of psychoactive substances (yes versus no). Regarding the clinical obstetric aspects, the variables analyzed will be: performed prenatal care (yes or no), number of prenatal consultations, gestational age when prenatal care started, pregnancy planning (yes or no), gestational age (in weeks), parity, medical indication for intrapartum cesarean section, high-risk pregnancy (yes versus no), postpartum complications (yes or no), neonatal complications (yes or no) and what the indication for cesarean section was.

Initially, the data were inserted in statistical software, software Statistical Package for the Social Sciences (SPSS) version 22.0, for analysis, description and interpretation of the results. Subsequently, simple statistics will frequently be performed. Confidence Interval 95% (CI: 95%), mean and Standard Deviation (SD±).

**RESULTS**

In this investigation, 97 physical records were analyzed between the months of January to March 2020, there were 8 losses due to inconclusive information, resulting in 89 records. The average age of women undergoing intrapartum cesarean section was 24.17 years (95% CI 4.736 - 6.053, SD 5.451), minimum 15 and maximum 38 years, mean schooling was 10.2 years (95% CI 1.636 - 2.704, SD 2,252), most lived without a partner 68 (76.4%, 95% CI 67.4-85.4) and had an income below two salaries 51 (57.3%, 95% CI 57.3 - 78.7).

Of the medical records analyzed regarding the cities of origin, the highest prevalences referred to those based in the capital 46 (51.7%, 95% CI 41.6-61.8), and surrounding cities 43 (48.3%, CI 95% 48.2-58.4).

The sociodemographic characterization of women submitted to intrapartum cesarean section is shown in Table 1.

VARIABLES	N (%)	CI 95%
<b>Age, years</b>		
≤18	11 (12.4)	5.6 – 20.2
≥19 to ≤34	74 (83.1)	75.3 – 91.0
≥35	4 (4.5)	.0 – 9.0
<b>Race*</b>		
White	19 (21.3)	13.5-30.3
Non-white	70 (78.7)	69.7-86.5
<b>Marital status</b>		
Lives with a partner	21 (23.6)	14.6 – 32.6
Lives without a partner	68 (76.4)	67.4 – 85.4
<b>Occupation</b>		
Formal job	18 (24)	12.4 – 28.1
Non-formal job	57 (76)	53.9 – 74.2
<b>City of origin</b>		
Goiânia	46 (51.7)	41.6 – 61.8
Surroundings	43 (48.3)	48.2 – 58.4

\* Self declared.

Table 1. Sociodemographic characterization of women undergoing intrapartum cesarean section, Goiânia, Brazil, 2019 (n = 89).

Table 2 shows the obstetric characterization of women who underwent intrapartum cesarean section and the reason for it. It was observed that 74 (83.1%) of the women were pregnant at term, between 37 weeks and 40 weeks and 6 days, in which the majority, 84 (84.5%) underwent prenatal care. Regarding parity, 51 (75.3%) of the women were experiencing their first pregnancy. Among the indications for intrapartum cesarean section, the most frequent were progression arrest 44 (49.4%), acute fetal distress 28 (31.5%), followed by pelvic cephalopelvic disproportion 8 (9.0%), the other records extended fetal macrosomia and Specific Hypertensive Gestation Syndrome (SHGS).

VARIABLES	N (%)	CI 95%
GI <sup>a</sup> at birth		
37w to 40w 6days	74 (83.1)	75.3 – 89.9
≥ 41w	15 (16.9)	10.1 – 24.7
Prenatal		
Yes	84 (84.4)	89.9 – 98.9
No	5 (5.6)	1.1 – 10.1
Number of PN consultations <sup>b</sup>		
< 6	27 (33.8)	22.5 – 43.8
≥ 6	53 (66.3)	56.3 – 77.5
Parity		
Primiparous	51 (57.3)	47.2 – 67.4
Multiparous	38 (42.7)	32.6 – 52.8
Cervical dilation on admission, cm		
< 4	27 (30.7)	21.6 – 40.9
≥ 4	61 (69.3)	59.17 – 78.4
Amniotomy		
Yes	16 (18)	10.1 – 25.8
No	73 (82)	74.2 – 89.9
Intrapartum oxytocin		
Yes	41 (46.1)	36.0 – 56.2
No	48 (53.9)	43.8 – 64.0
Non-pharmacological methods		
Yes	77 (86.5)	79.8 – 93.3
No	12 (13.5)	6.7 – 13.2
IP Cesarean indication <sup>c</sup>		
Failure to progress	44 (49.4)	39.3 – 60.6
AFD <sup>d</sup>	28 (31.5)	21.3 – 42.7
CPD <sup>e</sup>	8 (9.0)	3.4 – 15.7
Cervical dilation in the indication of cesarean section, cm		
< 6	25 (28.4)	18.2 – 37.5
≥ 6	63 (71.6)	62.5 – 81.8

<sup>a</sup>Gestational Age. <sup>b</sup>Prenatal. <sup>c</sup>Acute fetal distress. <sup>d</sup>Cephalopelvic disproportion. <sup>e</sup>Intrapartum

Table 2. Obstetric characterization of women undergoing intrapartum cesarean section and reason for indication, Goiânia, Brazil, 2019 (n = 89).

Table 3 shows the data related to the newborn and postpartum complications. In the study, 78 (87.6%) of the newborns were born with an Apgar of 1 minute of life greater than or equal to 7 and 11 (12.4%) with an Apgar less than 7. All newborns had an Apgar of 5th minute of life greater than or equal to 8.

VARIABLES	N (%)	CI 95%
Apgar 1 <sup>st</sup> min		
< 7	11 (12.4)	5.6 – 20.2
≥ 7	78 (87.6)	79.8 – 94.4
Immediate skin-to-skin contact		
Yes	20 (22.5)	13.5 – 36.5
No	69 (77.5)	67.4 – 86.5
Breastfeeding 1st hour of life		
Yes	19 (21.3)	13.5 – 30.3
No	70 (78.7)	69.7 – 86.5
Late clamping of the umbilical cord		
Yes	68 (76.4)	67.4 – 85.4
No	21 (23.6)	14.6 – 32.6
Respiratory assistance by oxygen HOOD		
Yes	16 (18)	10.1 – 25.8
No	73 (82)	74.2 – 89.9
Postpartum complications <sup>*</sup>		
Yes	2 (2.2)	0 – 5.6
No	87 (97.8)	94.4 – 100.0

\* Related to postpartum hemorrhage.

Table 3. Characterization of newborn care and postpartum complications, Goiânia, 2019 (n = 89).

Table 4 shows the most frequent gestational comorbidities of women submitted to intrapartum cesarean section.

VARIABLES	N (%)	CI 95%
SHGS <sup>a</sup> / Preeclampsia	4 (4.5)	1.1 – 9.0
GDM <sup>b</sup>	9 (10.1)	4.5 – 16.9
Gestational syphilis	4 (4.5)	1.1 – 9.0
UTF	8 (9.0)	3.4 – 15.7
No comorbidities	75 (71.9)	-

<sup>a</sup> Gestational Specific Hypertensive Syndrome. <sup>b</sup>Gestational Diabetes Mellitus. <sup>c</sup>Urinary tract infection.

Table 4. Obstetric comorbidities of women undergoing intrapartum cesarean section, Goiânia, 2019 (n = 89).

DISCUSSION

This study revealed a prevalence of women undergoing intrapartum cesarean section with a mean age of 24.1 years, with a predominance of the age group of 19 to 34 years, which represents 83.1% of the population studied and a small portion (12.4%) were 18 years old or younger. Most were non-white (48.7%), with an average of 10.2 years of study, without a formal job (76%), with low income (57.3%) and who lived without a partner (76.4%), as stated in the registration form and Declaration of Live Birth attached to the physical record.

The sociodemographic characteristics found in this investigation are similar to a study carried out in a public maternity hospital in Tocantins, with 239 women, in which the average age of women undergoing cesarean section was 26.5 years and 43% had completed high school consisting of about 11 years of studies<sup>14</sup>. Pádua et al, 2010, also showed a prevalence of 32.9% of women with indication for intrapartum cesarean section between 25 and 39 years of age in public maternity hospitals in São Paulo and Dis-

trito Federal<sup>15</sup>.

Some indicators, such as unfavorable socioeconomic level and low education, appear related to cesarean section indications in public maternity hospitals in Brazil, as found in this research<sup>14,16,17</sup>. It is worth noting that 48.3% of women belonged to the surrounding cities, given that the maternity in question is a reference for the State of Goiás in maternal and child care.

This study revealed a prevalence of women undergoing intrapartum cesarean section with a mean age of 24.1 years, with a predominance of the age group of 19 to 34 years, which represents 83.1% of the population studied and a small portion (12.4%) , were 18 years old or younger. Most were non-white (48.7%), with an average of 10.2 years of study, without a formal job (76%), with low income (57.3%) and who lived without a partner (76.4%) , as stated in the registration form and Declaration of Live Birth attached to the physical record.

Regarding the obstetric profile, most women were between 37 weeks and 40 weeks and 6 days, characterizing term pregnancy. Also, 84% of them had prenatal care, in which 66.6% attended 6 times or more. Studies on factors related to cesarean sections in Brazilian public hospitals also showed higher numbers of consultations, suggesting that pregnancies with a predisposition to cesarean sections due to comorbidities such as hypertension and Diabetes have greater adherence to medical consultations. Therefore, it is the clinical conditions of pregnant women that reflect a greater number of consultations. In addition, prenatal care is essential in caring for maternal and child health, as it enables better perinatal results through the early identification of gestational risks<sup>15,17</sup>.

Regarding parity, there was a prevalence of primiparous women, that is, women experiencing their first pregnancy. In Brazil, the proportion of cesarean sections is higher in primiparous women, especially those residing in the Central Region, and are often indicated without clinical criteria<sup>18</sup>. Still, 30.7% of the women in this study were admitted with cervical dilation less than four centimeters. It is known that the phase of labor on admission to maternity is an important factor. Studies point to greater risks of intrapartum cesarean section among women hospitalized with less than three centimeters of dilation of the uterine cervix, especially related to secondary dilatation arrest<sup>16</sup>. Therefore, there is a change in the profile of hospitalization of women, preferring hospitalization in the active phase of labor.

Although 86.5% of women received some non-pharmacological method that facilitates labor, such as bathing in warm water, Swiss ball, and freedom of deambulation, 46.1% were exposed to intrapartum intravenous oxytocin. A study on obstetric care in Brazil revealed that the use of oxytocin is greater in women with low education and users of the public service and deserves attention<sup>18</sup>. Oxytocin is a medication used in obstetric practice to correct uterine

activity when labor fails, however, it should not be used routinely and indiscriminately<sup>19</sup>.

The highest proportions of intrapartum cesarean sections were progression arrest (49.4%), Acute Fetal Distress (AFD) (31.5%), followed by Cephalopelvic disproportion (9.0%), corroborating with other studies that addressed the criteria clinics of cesarean sections of public maternity hospitals<sup>14,19,20</sup>. Despite obstetric progress, there has been a significant increase in cesarean rates in the world in recent decades, especially in Brazil. Cesarean sections have become the most frequent mode of delivery, reaching 85% of deliveries performed in private health services and 40% in the Unified Health System (SUS) <sup>21</sup>. The World Health Organization has prepared an acceptable rate of cesarean deliveries of 10% to 15%, based on the results of cesarean deliveries in countries with lower rates of maternal and neonatal mortality<sup>6</sup>.

In this sense, most of the indications found in this study characterize relative indications for cesarean sections, given that in the dystocia of progression or dilation of the uterine cervix, childbirth can occur from the correction of uterine dynamics. However, in cases in which Cephalopelvic Disproportion (CPD) is evidenced correctly in a partogram, cesarean section is indicated<sup>22</sup>. CPD is one of the most frequent obstetric conditions for cesarean section indications and perhaps the most debatable, however, when well diagnosed it is one of the absolute indications for cesarean section.

AFD is characterized by persistent asphyxia and occurs during labor, which can lead to impaired fetal compensatory mechanisms, which can be reversed through intrauterine fetal resuscitation. In clinical practice, when it is not able to treat hypoxia, termination of delivery is indicated by the fastest route<sup>13</sup>. Even so, technological advances related to childbirth assistance have been achieving better maternal and fetal outcomes, reducing perinatal morbidity.

In the study, 78 (87.6%) of the newborns were born with an Apgar of 1 minute of life greater than or equal to 7 and 11 (12.4%) with an Apgar less than 7. All newborns had an Apgar of 5th minute of life greater than or equal to 8, approaching the findings of a study carried out in a public maternity hospital in the Federal District<sup>22</sup>. The Apgar score is used to assess fetal vitality, which ranges from 0 to 10, where values below 7 can confirm the diagnosis of AFD<sup>23</sup>.

It is noteworthy that the majority of women in this study did not present comorbidities, totaling 71.9% of the studied sample. While a smaller portion (10.1%) had a diagnosis of GDM and 4.5% pre-eclampsia. It is known that some maternal diseases can complicate the evolution of pregnancy and labor, favoring unfavorable perinatal results and higher levels of cesarean sections<sup>15</sup>.

Among the limitations of this study, it is a fact that it is

retrospective with data from medical record annotations, which could cause bias, because the data collection depends on the quality of the annotations. Still, the possibility of bias in the responses of the pregnant women when filling in the medical record is considered, as well as the presence of variables without notes.

## CONCLUSION

There was a prevalence of women aged between 19 and 34 years old, the majority being non-white, with an average of 10.2 years of education, without a formal job, low income and who lived without a partner, concluding that the unfavorable socioeconomic level, low education and marital instability appear related to cesarean indications.

Regarding the obstetric profile, it was possible to observe that the majority were in term pregnancy, attended prenatal care, had no comorbidities and that there was a greater indication in primiparous women.

The prevalence of indications for intrapartum cesarean section was the progression arrest.

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