

# Retrospective Evaluation of the Cesarean Rates of a Training and Research Hospital in Istanbul Sancaktepe District

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## Abstract

**Introduction:** Cesarean rates have been rising steadily in recent years. This study aims to evaluate cesarean section rates performed in the first year in İstanbul Sancaktepe Şehit Profesör İlhan Varank Research and Training Hospital Department of Obstetrics and Gynecology due to the 10-Group Classification System (Robson classification).

**Methods:** Information about the cases was retrieved retrospectively from our hospital records of the Robson classification.

**Results:** The total cesarean ratios in our clinic were 31.9% in 1 year period. Our Robson Group 1 ratio was 21.5%. When we examined distribution according to the Robson groups, we noticed that the highest contribution to cesarean rates was achieved with 99.1% of Group 5, 100% of Group 6, 92.8% of Group 7, 80% of Group 8 and 100% of Group 9.

**Discussion and Conclusion:** The Robson On-Group Classification System is an easy-to-use and convenient method of analysis that can be used freely for all healthcare facilities. In the first year of our clinic, total cesarean rate was determined lower than the 2016 Turkey research data. The major factor in our cesarean rate was established as Robson Group 5. This group is the largest contributor to all cesarean rates in most obstetric populations.

**Keywords:** Cesarean rates; Robson criteria; Sancaktepe.

Cesarean delivery is defined as the delivery of the fetus through incisions made in the abdominal wall and uterine wall [1]. Cesarean delivery is an alternative delivery method when vaginal delivery is not possible or has a risk to the mother and/or fetus. The crude rate of cesarean section is an important global indicator for measuring access to obstetric services [2].

The World Health Organization (WHO) proposal is less than 10-15% cesarean rate for each country and ethnic group. The rates of cesarean delivery below 5% and above 15% were considered adversely concerning maternal mortality [3]. In 2011, WHO proposed the Robson-10- Group

Classification System as a global standard for monitoring, comparing and evaluating cesarean rates in healthcare organizations.

This system, defined in 2001, divides women into 10 groups according to their obstetric characteristics (parity, previous cesarean section, gestational age, the onset of labor, fetal presentation, number of fetuses) [4]. Table 1 shows the Robson Groups. Group 1 (nulliparous, single, cephalic presentation,  $\geq 37$  weeks of gestation, spontaneous labor) is one of the most important and discussed groups in the obstetric population. Group 2 includes nulliparous women at  $\geq 37$  weeks of gestation with a singleton fetus in

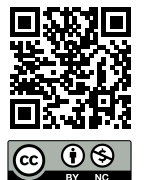
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**Table 1.** The 10-Group Robson Classification System**THE 10-GROUP ROBSON CLASSIFICATION SYSTEM OF CESAREAN DELIVERIES**

Robson Group No	GROUPS	Number of cases that underwent cesarean section (A)	Total number of births (B)	Cesarean delivery rate % (C)
1	Nulliparous, single, cephalic presentation, $\geq 37$ weeks, spontaneous labor			
2	Nulliparous, single, cephalic presentation, $\geq 37$ weeks, induced labor			
3	Multiparous (excl. previous cesareans), single, cephalic presentation, $\geq 37$ weeks, spontaneous labor			
4	Multiparous (excluding previous cesareans), single, cephalic presentation, $\geq 37$ weeks, induced labor or cesarean before labor			
5	Previous cesarean, single, head presentation, $\geq 37$ weeks			
6	All nulliparous breech presentations			
7	All multiparous breech presentations (including previous cesareans)			
8	All multiple pregnancies (including previous cesareans)			
9	All transverse oblique lies (including previous cesareans)			
10	All single cephalic presentations, $\leq 36$ weeks (including previous cesareans)			
Total				

cephalic presentation whose delivery is induced or has a pre-labor cesarean delivery. In this group, the termination of pregnancy and delivery is required, obstetricians choose other induction of delivery or cesarean section. Groups 3 and 4 are similar to Groups 1 and 2 but include all multiparous women at  $\geq 37$  weeks of gestation with a single cephalic pregnancy without any previous uterine scar. Group 3 is always associated with a low cesarean rate. Group 5 (multiparous women with a single cephalic presentation, at  $\geq 37$  weeks of gestation) with at least one uterine scar is a heterogeneous group and also largest contributor to cesarean rates in all obstetric populations. Group 6 includes a nulliparous, single breech presentation. Group 7 includes multiparous women with a single breech presentation and a previous uterine scar. Group 8 includes all multiple pregnancies, also including those with uterine scarring. Group 9 consists of singleton pregnancies with transverse or oblique lies, including those with a previous uterine scar when delivery is decided. Group 10 ( $< 37$  gestational weeks, single, cephalic presentation, all preterm births, including women with previous uterine scar) is a group that contributes to the birth rates performed in tertiary health care facilities.

According to the Directive on Performance and Quality in Health, the rate of cesarean section in education and research hospitals should not exceed 20% and in all other delivery, hospitals should not exceed 15% [5]. From 2012 on, in Turkey, "Robson 10- Group Classification System" was introduced in clinics.

Nowadays, anesthesia, drugs and materials used, surgical and postoperative care have reduced mortality and morbidity due to cesarean sections but still risks, such as infection, bleeding, need for transfusion, thromboembolic risks, longer hospital stay, delayed recovery, and more severe pain [6], and also long-term risks, such as placenta previa, placenta accreta and increased placental detachment should be considered [7].

In Turkey, total cesarean rates were 70.5% in the private hospitals, 69.1% in university hospitals, and 38.2% in state hospitals according to the 2016 data. When the Robson classification groups are examined in individual health sectors in Turkey, Group 1 cesarean rates are 50.4% in the public sector, 74.4% in the private sector, and 71.6% in universities, while Turkey's average is 61.9% [8].

This study was conducted with the intention to determine the place of our clinic on the target set by the Ministry of

Health and to examine the indications for cesarean section.

## Materials and Methods

This study included 3276 cases who gave birth in Gynecology and Obstetrics Clinic of Istanbul Sancaktepe Şehit Profesör İlhan Varank Training and Research Hospital between July 1, 2017 and July 1, 2018. Information about the cases was obtained retrospectively from Robson 10-group classification records of our hospital.

## Results

Between July 1, 2017, and July 1, 2018, a total of 3276 births were delivered in Istanbul Sancaktepe Şehit Profesör İlhan Varank Training and Research Hospital, and 1047 of these births were delivered by cesarean section, and the cesarean rate was found to be 31.9% in total. The evaluation of the birth data according to the Robson 10-Group Classification System is given in Table 2.

Cesarean section rates in our clinic were 31.9% in a one year period. Our Robson Group 1 rate was 21.5%. When the distribution of Robson groups was examined, Groups 5 (99.1%), 6 (100%), 7(92.8%), 8 (80%), and 9 (100%) made the highest contribution to cesarean rates as indicated. Group 5 can be considered as the major contributing factor because it included the highest number of patients.

## Discussion

Common classification of cesarean rates and indications provides the opportunity for evaluation and comparison, contributing to cesarean rates and effects [9]. In this study, the experience of the first year of our clinic after its establishment has been evaluated.

Turkey's total cesarean rates were 70.5% in the private hospitals, 69.1% in the university hospitals, and 38.2% in state hospitals according to the 2016 data. Cesarean rates in Turkey according to Robson classification for Group 1 are 50.4%, in the state hospitals, 74.4% in the private hospitals, 71.6% in university hospitals, while Turkey's average is 61.9% [8]. The total cesarean rate of our clinic in its first year was 31.9%, while cesarean rate in Robson Group 1 patients was 21.5%, which lower than Turkey's average cesarean rates.

When analyzed according to the individual groups, it is seen that the major factor in our cesarean rate is the patients with Robson Group 5 who gave birth at later than gestational 37 weeks. This group is the largest contributor to all cesarean rates in most obstetric populations. The most effective approach to control cesarean rates is to control primary cesarean rates in a way that does not endanger the health of the mother and/or fetus. Thus, guidelines for cesarean indications have been renewed in recent years. As another important approach, steps are being taken to

**Table 2.** The 10-Group Robson Classification System of Cesarean Deliveries performed between July 2017, and July 2018

Robson Group No	GROUPS	Number of cases that underwent cesarean section (A)	Total number of births (B)	Cesarean delivery rate % (C)
1	Nulliparous, single, cephalic presentation, ≥37 weeks, spontaneous labor	191	885	21.5
2	Nulliparous, single, cephalic presentation, ≥37 weeks, induced labor	15	31	48.3
3	Multiparous (excl. previous cesareans), single, head presentation, ≥37 weeks, spontaneous labor	108	1525	7
4	Multiparous (excluding previous cesareans), single, cephalic presentation, ≥37 weeks, induced or cesarean before labor	6	36	16.6
5	Previous cesarean, single, cephalic presentation, ≥37 weeks	478	482	99.1
6	All nulliparous breech presentations	15	15	100
7	All multiparous breech presentations (including previous cesareans)	13	14	92.8
8	All multiple pregnancies (including previous cesareans)	16	20	80
9	All transverse oblique lies (including previous cesareans)	3	3	100
10	All single cephalic presentations, ≤36 weeks (including previous cesareans)	30	73	41
Total		1047	3276	3.9

strengthen the midwifery system.

Since handling labor pain is an important factor in reducing primary cesarean rates, relevant approaches should be considered. The patient should be informed about the risks of cesarean section and women with anxiety of labor should be trained in the perinatal period and should be directed for psychological support if necessary. Although vaginal delivery after cesarean section is still being discussed and encouraged worldwide as an effective way to reduce primary cesarean rates, vaginal delivery after cesarean section is not preferred in our country due to medicolegal concerns.

Robson Groups 6, 7 and 9 contributing to the cesarean section rates are the groups that include presentation anomalies. Obstetricians are lacking of experience with handling labor in abnormal presentations this may be the cause of increasing rate. The external cephalic version may be applied in these patients if detected at an earlier phase of labor, but the chance of success is around 50%, and because of medicolegal concerns, this approach is less frequently preferred.

## Conclusion

The Robson 10-Group Classification System is an easy-to-use and convenient assessment method that can be used free of charge for all healthcare institutions. It is an effective method of analysis for evaluating the reasons for the increase in cesarean rates. Thus, it is recommended by WHO to make comparisons between health centers.

In the first year of our clinic, total cesarean rate was lower than the 2016 Turkey data. According to our research data, Robson Group 5 was the major factor contributing to our cesarean section rate. This group is the largest contributor to all cesarean section rates in all obstetric centers.

**Ethics Committee Approval:** Retrospective study.

**Peer-review:** Externally peer-reviewed.

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**Conflict of Interest:** None declared.

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