



### REVIEWER'S REPORT

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**Title: DISPARITIES IN CESAREAN SECTION RATES AMONG ROBSON GROUPS IN HIGH- VS. LOW-RESOURCE SETTINGS**

**Recommendation:**

- Accept as it is .....
- Accept after minor revision.....Yes.....
- Accept after major revision .....
- Do not accept (*Reasons below*) .....

Rating	Excel.	Good	Fair	Poor
Originality		√		
Techn. Quality		√		
Clarity			√	
Significance		√		

Reviewer Name: Dr. Jyotika Singh

**Date:** 25.02.25

**Reviewer's Comment for Publication.**

*(To be published with the manuscript in the journal)*

*The reviewer is requested to provide a brief comment (3-4 lines) highlighting the significance, strengths, or key insights of the manuscript. This comment will be Displayed in the journal publication alongside with the reviewers name.*

This study provides valuable insights into the disparities in cesarean section rates between high- and low-resource settings using the Robson Ten-Group Classification System. Its strength lies in the comparative analysis of clinical decision-making and healthcare accessibility, highlighting the need for balanced CS utilization. The findings emphasize the importance of improved antenatal care, labor management, and VBAC promotion to optimize maternal and neonatal outcomes.

**Rationale for minor revisions:** The study presents a well-structured analysis of disparities in cesarean section rates using the Robson Ten-Group Classification System. It offers valuable insights into differences between high- and low-resource settings, with robust methodology and statistical analysis. However, minor revisions are needed to enhance clarity, address inconsistencies, and refine certain sections for better readability.

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### *Detailed Reviewer's Report*

#### **Introduction**

The paper effectively highlights the global rise in caesarean section (CS) rates, emphasizing the dual concerns of overuse in high-resource settings and underuse in low-resource settings. The study adopts the Robson Ten-Group Classification System (RTGCS) as a standardized framework for analyzing CS trends. The introduction is well-structured, providing a clear background on CS trends, the significance of RTGCS, and the need for comparative analysis between different healthcare settings. A notable strength is the discussion of disparities in Groups 1, 2, and 5, which are major contributors to variations in CS rates. However, a minor limitation is that the introduction could further elaborate on the implications of these disparities in maternal and neonatal health.

#### **Methodology**

The study employs a retrospective observational design, comparing CS rates across two tertiary care hospitals—one in a high-resource urban setting and the other in a low-resource rural setting. The methodology is clearly defined, detailing participant selection (200 cases, 100 per centre), inclusion and exclusion criteria, data collection parameters, and statistical methods. The use of MedCalc version 6.1 for statistical analysis and the application of chi-square and t-tests ensure robust comparative analysis. Ethical approval strengthens the study's credibility. However, the reliance on hospital records may introduce limitations related to data completeness and consistency.

#### **Results**

The findings reveal significant disparities in CS rates, with high-resource hospitals showing higher elective CS rates (49.55%) compared to low-resource hospitals (36%). The study provides a detailed breakdown of indications for CS, highlighting factors such as higher induction failure in low-resource settings and increased VBAC reluctance in high-resource settings. The demographic differences, including BMI, haemoglobin levels, and antenatal care attendance, offer critical insights into maternal health disparities. The study effectively supports its results with relevant literature, enhancing credibility. However, further subgroup analysis, such as stratification by maternal age or parity, could provide additional depth to the findings.

#### **Discussion**

The discussion section provides a comprehensive interpretation of the results, linking findings to broader global trends and previous studies. It effectively addresses the role of healthcare accessibility, clinical decision-making, and patient-related factors in CS disparities. The discussion of defensive medicine and maternal request CS in high-resource settings and the delayed obstetric interventions in low-resource settings adds valuable context. The study's engagement with existing literature, such as WHO recommendations and international comparisons, strengthens the argument. However, the discussion could benefit from a deeper exploration of potential interventions to balance CS rates across settings.

#### **Strengths**

- The study systematically applies the RTGCS, allowing for standardized comparisons across healthcare settings.
- The inclusion of both high- and low-resource settings enhances the study's relevance to global obstetric practices.
- The robust statistical analysis ensures reliable findings, strengthening the study's validity.
- Ethical clearance and adherence to methodological rigor add to the study's credibility.

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#### Limitations

- The retrospective design relies on hospital records, which may introduce data limitations such as missing or incomplete records.
- Differences in clinical protocols and staffing across hospitals may affect findings, limiting direct comparability.
- The study focuses only on institutional deliveries, excluding home births or deliveries in smaller healthcare centres.
- The study does not explore long-term maternal or neonatal outcomes post-CS, which could provide a more comprehensive perspective.

#### Conclusion

The study successfully identifies and analyzes disparities in CS rates between high- and low-resource settings, emphasizing the need for balanced utilization. It highlights the higher rate of elective CS in high-resource settings and the challenges of delayed interventions in low-resource hospitals. The findings reinforce the necessity of strengthening antenatal care, optimizing labour management, and promoting VBAC where appropriate. The study provides a valuable foundation for future research and policy interventions aimed at achieving equitable CS practices.

#### Final Thoughts

This paper makes a significant contribution to the understanding of CS rate disparities by leveraging the RTGCS for comparative analysis. Its findings align with global trends, reinforcing the need for targeted interventions in both high- and low-resource settings. While the study's retrospective nature and reliance on institutional records introduce some limitations, its robust methodology and comprehensive analysis make it a valuable resource for obstetric research and policy development.

#### Recommendations

1. Future studies should incorporate prospective designs to minimize data limitations and enhance result accuracy.
2. Investigating long-term maternal and neonatal outcomes post-CS would provide a more holistic understanding of the implications.
3. Standardizing labour monitoring tools such as partographs across settings could help address disparities in decision-making.
4. Policymakers should consider implementing structured VBAC programs in high-resource hospitals to reduce unnecessary CS rates.
5. Strengthening antenatal care and timely referral systems in low-resource settings would help mitigate emergency CS due to delayed interventions.
6. A multi-centre study including more diverse healthcare settings would enhance the generalizability of findings.