

PEER REVIEW HISTORY

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ARTICLE DETAILS

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| TITLE (PROVISIONAL) | Analysis of Caesarean Sections using Robson Ten Group Classification System in a University Hospital in eastern Ethiopia: a cross-sectional study |
| AUTHORS | Tura, Abera Kenay; M Pijpers, Olga; de Man, Myrna; Cleveringa, Myrthe; KV Koopmans, Ingeborg; Gure, Tadesse; Stekelenburg, Jelle |

VERSION 1 – REVIEW

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| REVIEWER | Adeline Boatin Massachusetts General Hospital Harvard Medical School USA |
| REVIEW RETURNED | 16-Nov-2017 |

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| GENERAL COMMENTS | <p>Overall comments</p> <p>This manuscript aims to use a retrospective review of chart records to analyze cesarean section in a major referral hospital in Ethiopian. The manuscript is well written, clear and easy to interpret and concise. The data are well presented. This is an important topic and the study findings point to the need for further scrutiny of CS utilization both in this institution and other similar institutions. Specific comments are made by section below</p> <p>Introduction:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Page 4, Line 3: The World Health Organization has updated its recommendation regarding CS rates and no longer dictates a specific CS rate as in the 1985 Lancet paper. Consider including the more up to date statement/recommendation. <input type="checkbox"/> Page 4, line 13: Might consider mentioning that the national rates quoted of 15% and 46% in for profit centers are from a 2011 study and thus likely out of date and given global trends, probably even higher than those. <p>Methods:</p> <ul style="list-style-type: none"> <input type="checkbox"/> What are the typical methods used to determine gestational age and fetal presentation at this hospital? Might be helpful information to the reader to determine how accurate these are likely to be reported in the medical record. <p>Results:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Figure 1: Approximately 20% of the charts were either incomplete and or not found. Can the authors provide a bit more detail on the 244 charts, as to how many were incomplete vs not found? And for those incomplete where there any consistent patterns that were seen <input type="checkbox"/> Page 8, Line 8; shows up to 30% of deliveries had a |
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| | <p>hospitalization > 7 day. This seems a very high proportion. Any rationale for this? Also, might be reasonable to dichotomize this by the typical length of stay vs over the typical length.</p> <p>Discussion:</p> <ul style="list-style-type: none"> □ The finding that women in group 3, (singleton, cephalic, multiparous women in spontaneous labor) were the greatest contributor is quite significant, as in theory this should represent the group least at risk for CS. This deviation from what would have been expected should be discussed further and some attention given to possible drivers of this at this institution. Although it is noted that there are some similarities with findings in Tanzania and South Africa, it is not clear exactly what was similar vs. different and what might explain this. □ More attention however should be giving to discussing the limitations of the retrospective review and how incomplete and missing information could bias results. In particular, to the potential effect of 20% of charts either not found or needing to be excluded. Could this potentially have led to a systematic bias or some sort. Were types of information more likely to be incomplete and thus charts from a group more likely to be excluded. |
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| REVIEWER | Stefania Triunfo Catholic University of Rome, Italy |
| REVIEW RETURNED | 28-Nov-2017 |

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| GENERAL COMMENTS | <p>In their paper, Tura et al aimed to analyze CS rates in an Ethiopian Hospital during an approximately year temporal interval (01/2016-04/2017) by using Robson Ten Group Classification System (TGCS). They found that Groups 1, 3, and 5 were the major contributors to the overall CS rate in the study period. Additionally, they reported the three most frequent major indications for CS were fetal compromise, obstructed labor and previous CS.</p> <p>TGCS represents an optimal tool for studying one of the most relevant problems in obstetrics worldwide (increase of CS rate), already defined as a gold standard by WHO. The use of TGCS aims to analyze CS trends, without considering medical indications, susceptible of imprecision and not always comparable. The paper is of interest because involves a developing country, with peculiar characteristics in terms of mode of delivery and unequal access related to economic issues and geographic regions. This paper add information to previous literature including a well-recognized method to study CS rates, and reporting medical indications in order to improve the understanding of peculiar Ethiopian situation.</p> <p>The paper is characterized by readability and essential information. I have 3 suggestions/requests:</p> <ol style="list-style-type: none"> 1. To add to the relative size of each group the contribution of CS in each group. 2. To consider the opportunity to include the additional graph in the main text. 3. To enrich the discussion with a parallelism with European countries in terms of different reasons linked to the similar findings in Groups 1, 3 and 5 (i.e., non-medical risk factors on the decision making process by obstetricians, such as cultural aspects, medical-legal issues, etc.). |
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VERSION 1 – AUTHOR RESPONSE

Editorial Request:

Please improve/ expand the discussion section. Please ensure that this section covers the following areas: a statement of the principal findings; strengths and weaknesses of the study; strengths and weaknesses in relation to other studies, discussing important differences in results; the meaning of the study: possible explanations and implications for clinicians and policymakers; and unanswered questions and future research.

Thank you. We have updated the discussion included the sections mentioned (highlighted).Page 11-13

Reviewers' Comments to Author:

Reviewer: 1

Reviewer Name: Adeline Boatin

Institution and Country: Massachusetts General Hospital, Harvard Medical School, USA

Competing Interests: None declared

Overall comments

This manuscript aims to use a retrospective review of chart records to analyze cesarean section in a major referral hospital in Ethiopian. The manuscript is well written, clear and easy to interpret and concise. The data are well presented. This is an important topic and the study findings point to the need for further scrutiny of CS utilization both in this institution and other similar institutions. Specific comments are made by section below

Introduction:

-Page 4, Line 3: The World Health Organization has updated its recommendation regarding CS rates and no longer dictates a specific CS rate as in the 1985 Lancet paper. Consider including the more up to date statement/recommendation.

Thank you for the suggestion. The recent reference was cited (Page 4, line 7-10)

-Page 4, line 13: Might consider mentioning that the national rates quoted of 15% and 46% in for profit centers are from a 2011 study and thus likely out of date and given global trends, probably even higher than those.

Thank you for the suggestions. The statement was rephrased (page 4, line 27-31).

Methods:

-What are the typical methods used to determine gestational age and fetal presentation at this hospital? Might be helpful information to the reader to determine how accurate these are likely to be reported in the medical record.

Thank you for the comment. Gestational age was estimated based on early perinatal ultrasound or last menstrual period (LMP) when available. A birth weight of >2500gm was used as a proxy measure of term pregnancy when ultrasound report or LMP was not available. We added this information to the manuscript (page 6, line 21-24)

Results:

-Figure 1: Approximately 20% of the charts were either incomplete and or not found. Can the authors provide a bit more detail on the 244 charts, as to how many were incomplete vs not found? And for those incomplete where there any consistent patterns that were seen

Thank you for the comments. The number of missed files and incomplete information was described (page 7, line 41-49). There was no patterns in the files with incomplete information (page 11, line 15-22)

-Page 8, Line 8; shows up to 30% of deliveries had a hospitalization > 7 day. This seems a very high proportion. Any rationale for this? Also, might be reasonable to dichotomize this by the typical length of stay vs over the typical length.

We indicated that 25% of the women had potentially life-threatening complications that may result in hospitalization than usual dates (page 7, line 51-53).

Discussion:

-The finding that women in group 3, (singleton, cephalic, multiparous women in spontaneous labor) were the greatest contributor is quite significant, as in theory this should represent the group least at risk for CS. This deviation from what would have been expected should be discussed further and some attention given to possible drivers of this at this institution. Although it is noted that there are some similarities with findings in Tanzania and South Africa, it is not clear exactly what was similar vs. different and what might explain this.

Thank you. We have indicated the variations and similarities with their possible explanations (page 10, line 26-29), and possible explanations about contribution of group 3 were given (page 10, line 29-32)

-More attention however should be giving to discussing the limitations of the retrospective review and how incomplete and missing information could bias results. In particular, to the potential effect of 20% of charts either not found or needing to be excluded. Could this potentially have led to a systematic bias or some sort. Were types of information more likely to be incomplete and thus charts from a group more likely to be excluded.

Thank you. We included the limitations that could arise from the excluded files and common missed variables (page 11, line 15-22).

Reviewer: 2

Reviewer Name: Stefania Triunfo

Institution and Country: Catholic University of Rome, Italy

Competing Interests: None declared

In their paper, Tura et al aimed to analyze CS rates in an Ethiopian Hospital during an approximately year temporal interval (01/2016-04/2017) by using Robson Ten Group Classification System (TGCS). They found that Groups 1, 3, and 5 were the major contributors to the overall CS rate in the study period. Additionally, they reported the three most frequent major indications for CS were fetal compromise, obstructed labor and previous CS.

TGCS represents an optimal tool for studying one of the most relevant problems in obstetrics worldwide (increase of CS rate), already defined as a gold standard by WHO. The use of TGCS aims to analyze CS trends, without considering medical indications, susceptible of imprecision and not always comparable. The paper is of interest because involves a developing country, with peculiar characteristics in terms of mode of delivery and unequal access related to economic issues and geographic regions. This paper add information to previous literature including a well-recognized method to study CS rates, and reporting medical indications in order to improve the understanding of peculiar Ethiopian situation.

The paper is characterized by readability and essential information. I have 3 suggestions/requests:

1. To add to the relative size of each group the contribution of CS in each group.

We want to thank you for this suggestion. We realize and appreciate that knowledge of relative size of each group could have an added value to the discussion. However, with the current study we only collected data about women who underwent CS because of the difficulty to retrospectively assess large number of deliveries from non-digital medical file. Thank you once again.

2. To consider the opportunity to include the additional graph in the main text.

Thank you for your suggestion. The additional file was included in the main text (Figure 4)

3. To enrich the discussion with a parallelism with European countries in terms of different reasons linked to the similar findings in Groups 1, 3 and 5 (i.e., non-medical risk factors on the decision making process by obstetricians, such as cultural aspects, medical-legal issues, etc.).

Thank you for your comments. Possible explanations about Groups 1, 3, 5 between our setting and European countries were discussed (page 10, line 43-56)

VERSION 2 – REVIEW

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| REVIEWER | Stefania TRIUNFO Catholic University of the Sacred Heart Rome Italy |
| REVIEW RETURNED | 29-Dec-2017 |

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| GENERAL COMMENTS | All comments have been considered, as suggested |
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| REVIEWER | Adeline Boatin Massachusetts General Hospital Harvard Medical School USA |
| REVIEW RETURNED | 16-Jan-2018 |

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| GENERAL COMMENTS | <p>Thanks for addressing prior review comments. A few minor comments</p> <p>1) Please update the methods to include a description of how fetal presentation is routinely assessed in this institution.</p> <p>2) Lifethreatening complications vs. near miss...not entirely clear how these are different</p> <p>3) Table 3 - if formatting would allow it would be helpful to have the percentages for each indication within each group and not just the totals.</p> <p>4) strengths and limitations section should include inability to compute relative size of each robson group</p> |
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VERSION 2 – AUTHOR RESPONSE

Reviewer: 1

1) Please update the methods to include a description of how fetal presentation is routinely assessed in this institution.

Thank you for your comments. We have included methods used to routinely assess gestational age in the facility (page 6, line 27-31) .

2) Lifethreatening complications vs. near miss...not entirely clear how these are different

Thank you for your comments. Life-threatening complications include woman who developed organ dysfunction, who survived (maternal near miss) or dead (maternal death) (page 6, line 19-24).

3) Table 3 - if formatting would allow it would be helpful to have the percentages for each indication within each group and not just the totals.

Percentages for each indication included. Thank you (Page 9, table 3)

4) strengths and limitations section should include inability to compute relative size of each Robson group

We want to thank you for your comments. Inability to compute relative size of each Robson group was included in the limitation section (page 11, line 18).