Predictors of maternal mortality in Eastern Ethiopia: A multicentre case control study

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Introduction

- Disproportionately, 99% of all MM occurs in low-resource settings, like Ethiopia. Ethiopia still contributes 10 000 MDs annually. As part of responding to this high maternal mortality, Ethiopia is implementing MDSR program since 2013 for identifying, reviewing and initiating response to reduce similar deaths in the future.
- While MDSR is one the best source of why a woman dies in Ethiopia, it doesn't have additional comparable population for identifying the basic determinants beyond the common causes.
- To achieve the SDG target of no country with MMR of more than 140 per 100 000 live births, Ethiopia's journey of the last decade require understanding of system bottlenecks and determinants of maternal mortality for designing appropriate interventions.

Methods

- A hospital-based multi-center case control study was employed to a cohort of women admitted to 13 public hospitals in eastern Ethiopia from April 01, 2021 up to March 31, 2022.
- Cases refer to all maternal deaths while women who developed obstetric complications but survived were considered controls.
- For each case, three controls were randomly selected from the cohort.
- Data were collected through review of medical records. Collected data were entered and cleaned using Epidata 3.1, and analysed using Stata-16.
- Both bivariable and multivariable logistic regression analysis were computed to identify the predictors of maternal mortality at $p<0.05$.

Results: A total of 280 (70 cases and 210 controls) were included. The majority of cases (71.4%) and controls (73.9%) were 20-34 years old.

Predictors of maternal mortality were:

- **Referred from lower facilities (AOR=2.26; 95% CI 1.06-4.83),**
- **Birth by caesarean section (AOR=3.64; 95% CI 1.67-7.89),**
- **Postpartum haemorrhage (AOR=6.24; 95% CI 2.59-15.04), and**
- **Pre-existing medical conditions (AOR=6.56; 95% CI 1.45-29.59)**

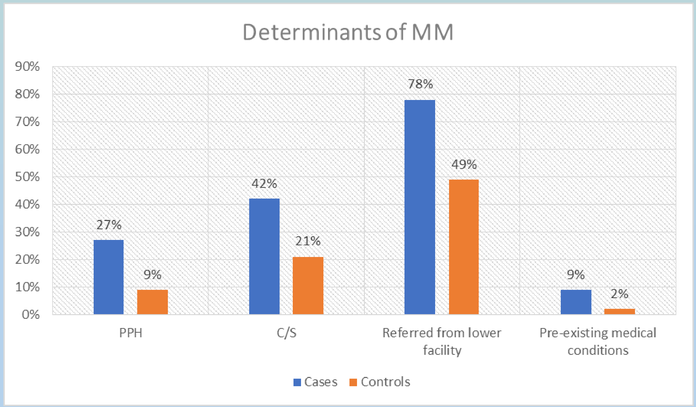

Figure 1: Predictors of maternal mortality in Eastern Ethiopia

Conclusion

- ✓ Women continue to die from known obstetric conditions and related managements.
- ✓ A thorough case-by-case audit of management of women in these facilities and tailored context specific interventions are required to analyse the quality of care, timeliness of interventions, and identify health system bottlenecks for designing interventions for ending preventable maternal mortality.
- ✓ In addition to auditing, working for creating a suitable environment where smooth and friendly liaison communication between hospitals, inter-departmental communication for high risk mothers, advanced ICU care and OR-setup, and functional blood bank at all kinds of hospitals can improve lifesaving interventions.

Women are not dying because of untreatable diseases. They are dying because societies have yet to make the decision that their lives are worth saving. (Prof. Mohammed Fathalla, Former FIGO President)