### 8th International Conference

# GYNECOLOGY AND OBSTETRICS

### April 27-28, 2023 | Amsterdam, The Netherlands

Received Date: 20-12-2022 | Accepted date: 22-12-2022 | Published date: 15-05-2023

## Perinatal and Neonatal outcomes in immigrants from conflict-zone countries: A systematic review and meta-analysis of observational studies

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**Objectives:** There are controversies regarding the risk of adverse pregnancy outcomes among immigrants from conflict-zone countries. The aim of this systematic review and meta-analysis was to investigate the risk of perinatal and neonatal outcomes among immigrants from conflict-zone countries compared to native-origin women in host countries.

Methods: A systematic search on the databases of PubMed/MEDLINE, Scopus, and Web of Science was carried out to retrieve studies on perinatal and neonatal outcomes among immigrants from Somalia, Iraq, Afghanistan, Yemen, Syria, Nigeria, Sudan, Ethiopia, Eritrea, Kosovo, Ukraine and Pakistan. Only peer-reviewed articles published in English language were included in the data analysis and research synthesis. Odds ratio and forest plots were constructed for assessing the outcomes of interests using the DerSimonian and Laird, and inverse variance methods. The random-effects model and the Harbord test were used to account for heterogeneity between studies and assess publication bias, respectively. Further sensitivity analysis helped with the verification of the reliability and stability of our review results.

**Results:** The search process led to the identification of 40 eligible studies involving 215,718 pregnant women with the immigration background from conflicting zone and 12,806,469 native-origin women. The adverse neonatal outcomes of the risk of small for gestational age (Pooled OR = 1.8, 95% CI = 1.6, 2.1), 5-min Apgar score less than 7 (Pooled OR = 1.4, 95% CI = 1.0, 2.1), still birth (Pooled OR = 1.9, 95% CI = 1.2, 3.0), and perinatal mortality (Pooled OR = 2,0, 95% CI = 1.6, 2.5) were significantly higher in the immigrant women compared to the native-origin women. The risk of maternal outcomes including cesarean section (C-S) and emergency C-S, instrumental delivery, preeclampsia and gestational diabetes were similar in both groups.

**Conclusion:** Although the risk of some adverse maternal outcomes were comparable in the groups, the immigrant women from conflicting zone countries had a higher risk of neonatal mortality and morbidity including SGA, 5-min Apgar score less than 7, still birth, and perinatal mortality compared to the native-origin population. Our review results show the need for the optimization of health care and further investigation of long-term adverse pregnancy outcomes among immigrant women.

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#### **Biography**

Samira Behboudi-Gandevani is a respected academic in the field of Nursing and Health Sciences. She is a faculty member at Nord University, Bodø, Norway, where she continues to advance the field through her research and teaching.

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