Maternal mortality determinants in a middle-income country: Retrospective study

Karina Nukeshtayeva[1], Gaukhar Kayupova[1], Nurbek Yerdessov[1], Zhanerke Bolatova[1], Olzhas Zhamantayev[1], and Anar Turmukhambetova[1]

[1]Karaganda Medical University

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Abstract

Objective: To identify factors contributing to maternal mortality in Kazakhstan. **Design:** A retrospective study of the health and demography data set of Kazakhstan from 2000 to 2020. **Setting and population:** The data from the annual statistical report "Population health and healthcare organizations' performance in the Republic of Kazakhstan from 2000 to 2020". Kazakhstan and its 14 regions and 3 main cities for the period 2019-2020. **Methods:** We analyzed the MMR trend in Kazakhstan and in all 14 regions and 3 main cities for the period 2000-2020. We applied Univariate Linear Regression Models with Logarithmic Transformation of the outcome and predictors to detect determinants of MMR for 2019 and 2020 in Kazakhstan. **Main Outcome Measures:** Maternal mortality ratio and determinants. **Results:** Trends in MMR in many regions of Kazakhstan show a steady decline starting from 2000 until 2010-2015 with a subsequent increase by 2020. MMR was associated with factors such as socio-economic, health service-related, and population health indicators. An increase in most of these indicators leads to a decrease in maternal mortality, except obstetric beds per 1000 births, number of inpatient facilities, and population median age, which leads to an increase in MMR. **Conclusions:** Maternal mortality is a complex issue that is influenced by various socio-economic factors, healthcare system factors, and disease burden. Despite Kazakhstan's alignment with the SDG goals, including reducing maternal mortality, the country's middle-income status may have led to fluctuations in MMR.

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