



Background & Justification

- Maternal mortality remains a significant public health challenge worldwide, with Nepal being no exception.
- Despite notable progress in recent years, maternal mortality rates in Nepal remain high compared to global standards at 151 per 100,000 live births.
- Target 3.1** of the Sustainable Development Goals (SDGs) emphasizes reducing the global maternal mortality ratio to less than 70 per 100,000 live births by 2030 (WHO, 2015).
- Analyzing the geographical, socioeconomic, and cultural factors affecting maternal health will inform targeted interventions and help prioritize resources for vulnerable populations in Nepal.

Background Characteristics	P-value
Ethnicity	0.00
Province	0.00
Age in 5-year groups	0.00
Type of place of residence (Urban vs rural)	0.037
Literacy	0.013
Relationship to household head	0.00
Owns a mobile telephone	0.003
Wealth index combined	0.00
Total children ever born	0.00
Covered by health insurance	0.031
Hemoglobin level (g/dl - 1 decimal)	0.439
Anemia level	0.108
Result of measurement - hemoglobin	0.356
Women's age in years (from household questionnaire)	0.00
Under age 18 (from household questionnaire)	0.529
Minutes to nearest healthcare facility	0.102
Mode of transportation to the nearest healthcare facility	0.36
Duration of pregnancy in months	0.00

Objectives

- Analyzing the spatial and socioeconomic factors influencing maternal mortality in Nepal and identifying the key covariates contributing to maternal health disparities across different provinces.
- Applied Objectives
- To develop a spatial risk model identifying regions in Nepal with elevated maternal mortality rates.
 - To evaluate the impact of geographical, socioeconomic, and healthcare access factors on maternal mortality across various provinces.
 - To quantify the association between maternal health outcomes and variables such as literacy, wealth, healthcare access, and place of residence (urban vs. rural).

Preliminary Results

- Statistically significant associations were found between maternal health outcomes and ethnicity, province, age in 5-year groups, duration of pregnancy, total children ever born, and women’s age, with p-values of 0.00, indicating strong links between these background characteristics and maternal mortality.
- Socioeconomic factors, such as type of residence (urban vs rural) ($p = 0.037$), literacy ($p = 0.013$), mobile phone ownership ($p = 0.003$), health insurance coverage ($p = 0.031$), and wealth index were significantly associated with maternal outcomes, highlighting the importance of access to healthcare resources and education.

Methodology

- Download, clean, and analyze the Nepal Demographic and Health Survey (NDHS) 2022 Pregnancy Records dataset.
- Summarize key variables that may serve as predictors of maternal mortality.
- Conduct a Chi-squared analysis to assess the significance of relationships between background characteristics and maternal health outcomes.
- Partner with the Institute of Integrative Conservation to produce maps on ArcGIS of the data.

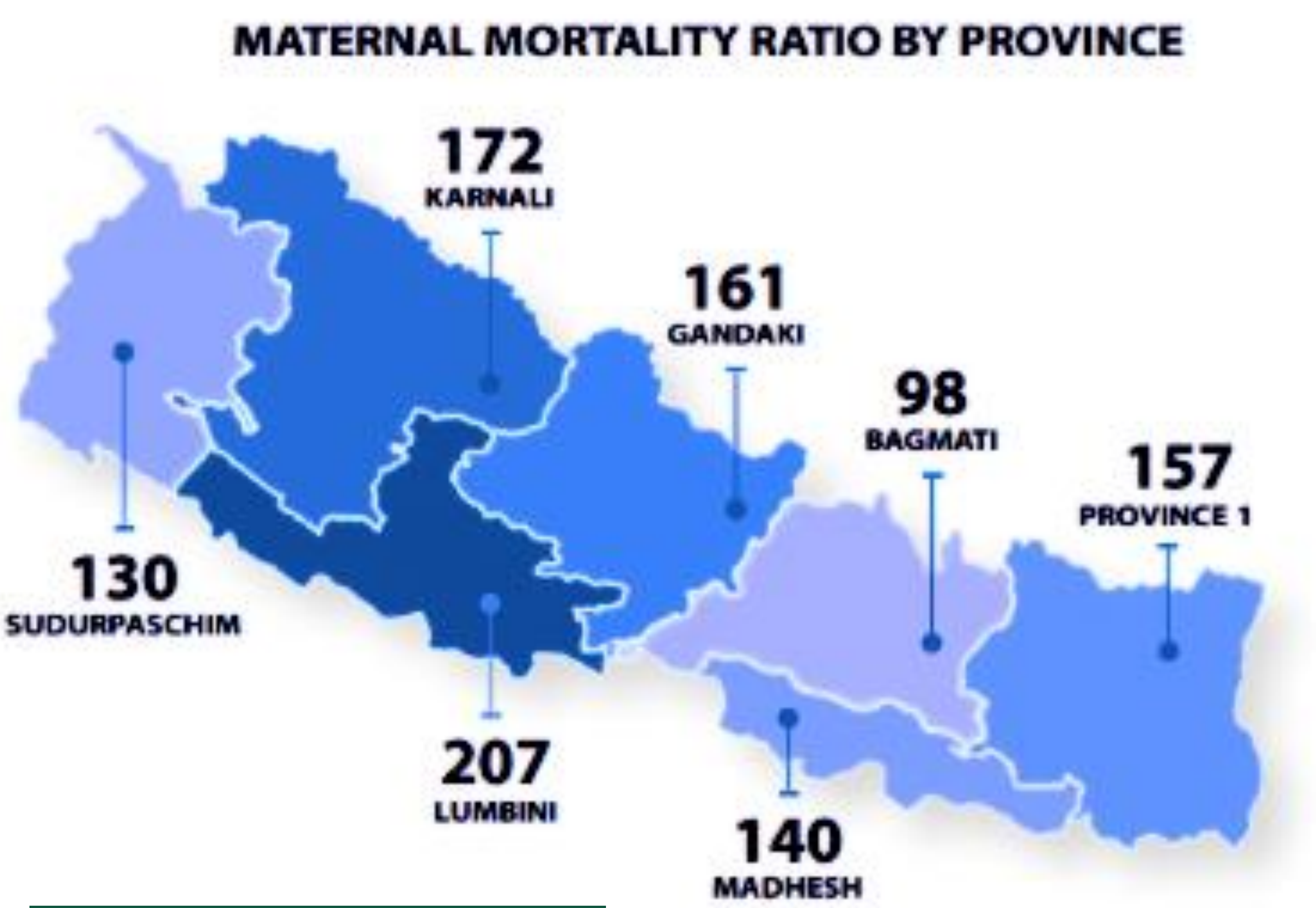
Policy Implications

The main policy implication is to help Target services where they’re needed most. Spatial analysis shows which areas lack maternal health care, helping policymakers direct resources (like clinics and health workers) to underserved regions. It also shows us that Improvements in emergency access are needed. Mapping travel distances helps design better transport and referral systems for women needing urgent care.

The next steps are to conduct qualitative interviews in these hotspots and determine, using the Three Delays Framework inform policy on access to maternal health care. The Three Delays Framework explains barriers to maternal healthcare by identifying delays in: (1) deciding to seek care, (2) reaching a health facility, and (3) receiving adequate care once at the facility.

Next Steps

- From a sociological perspective, conduct a comprehensive scoping review on Maternal health determinants across the different provinces.
- To run a geostatistical model to predict maternal mortality prevalence in Nepal.
- This would help to better understand township level disparities and help inform maternal healthcare policies.
- Op-Ed Titled “ Rural Mothers in Nepal Deserve Doctors Too“ Has been submitted to the Nepali Times for editorial review and future publication.



References

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