



TOPOGRAPHICAL DIFFERENCES OF INFANT MORTALITY IN NEPAL: DEMOGRAPHIC AND HEALTH SURVEY 2011

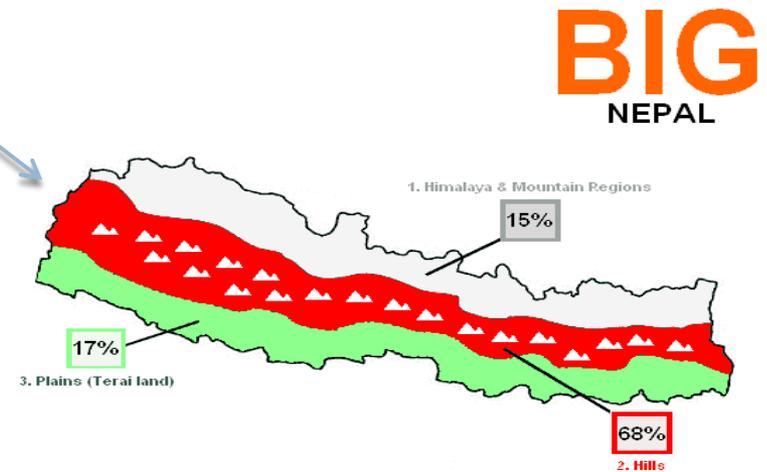
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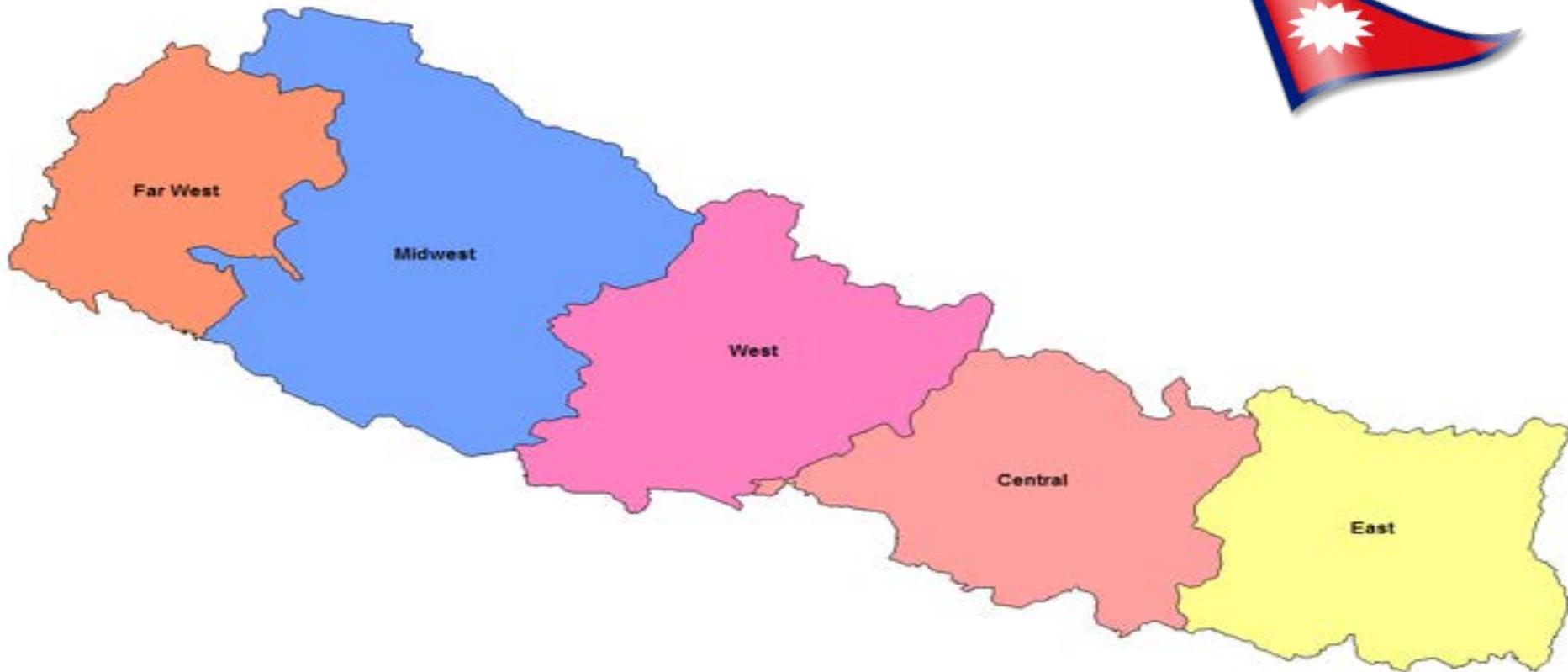
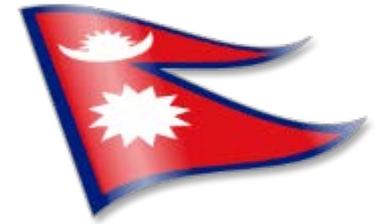
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Three Ecological Zones



More Than 80% of Nepal is Higher Grounds

Five Developmental Regions



Specific Objectives

- To examine the association between ecological zones and infant mortality in Nepal.
- To assess the effect of perceived distance to a health facility on the association between ecological zones and infant mortality in Nepal.

Background

- Infant mortality rate (IMR) is defined as the number of deaths among infants under one year of age per 1,000 live births
- IMR in Nepal: 46 deaths per 1,000 live births
- One in every 22 Nepalese children dies before reaching age 1

Background

- Geographical variation is an issue in health care delivery in Nepal
- Mountain zone >> greatest disadvantage
- Mountain zone << limited attention



Research Question



Variation in IMR:

Ecological zones and perceived distance to a
health care facility ?

Methods

- **Study Design:** Cross-sectional
- **Data Set:** Nepal Demographic Health Survey (NDHS), 2011
 - A nationally representative sample survey
 - Collects demographic & health information

Population/Sample size

- **Study Population:** Live birth within the five years preceding the survey, 2011
- **Sample size:** 5,306 total live births and 237 total infant deaths



Variables

- Dependent variable: IMR
- Independent variable: Ecological zones
- Other variables (household, maternal & child characteristics)

Statistical Analysis

- Descriptive statistics
- Pearson chi-square test
- Fisher exact test
- Logistic regression



Results & Discussion

Births, number of infant deaths and infant mortality rate in each ecological zone in the five years preceding the survey, Nepal DHS 2006-2011

	No. of live births (%)	No. of infant deaths	IMR/1000 (95% CI)	Risk Ratio
Mountain	1020 (19.2)	56	54 (40-68)	1.42*
Hill	2135 (40.2)	97	45 (36-54)	1.17
Terai	2151 (40.5)	84	39 (30-47)	Ref

* P-value of chi-square test statistically significant at 0.05

Key Findings

- Perceived distance to a health facility: “Big problem” and “Not a big problem”

- Distance as a big problem by zone:

Mountain zone: **70.8%**

Hill zone: **60.0%**

Terai zone: **45.6%**



Key Findings

Distance to a health facility	OR (95% CI)	p-value
Not a big problem	Ref	
Big problem	1.40 (1.10-1.90)	0.004*

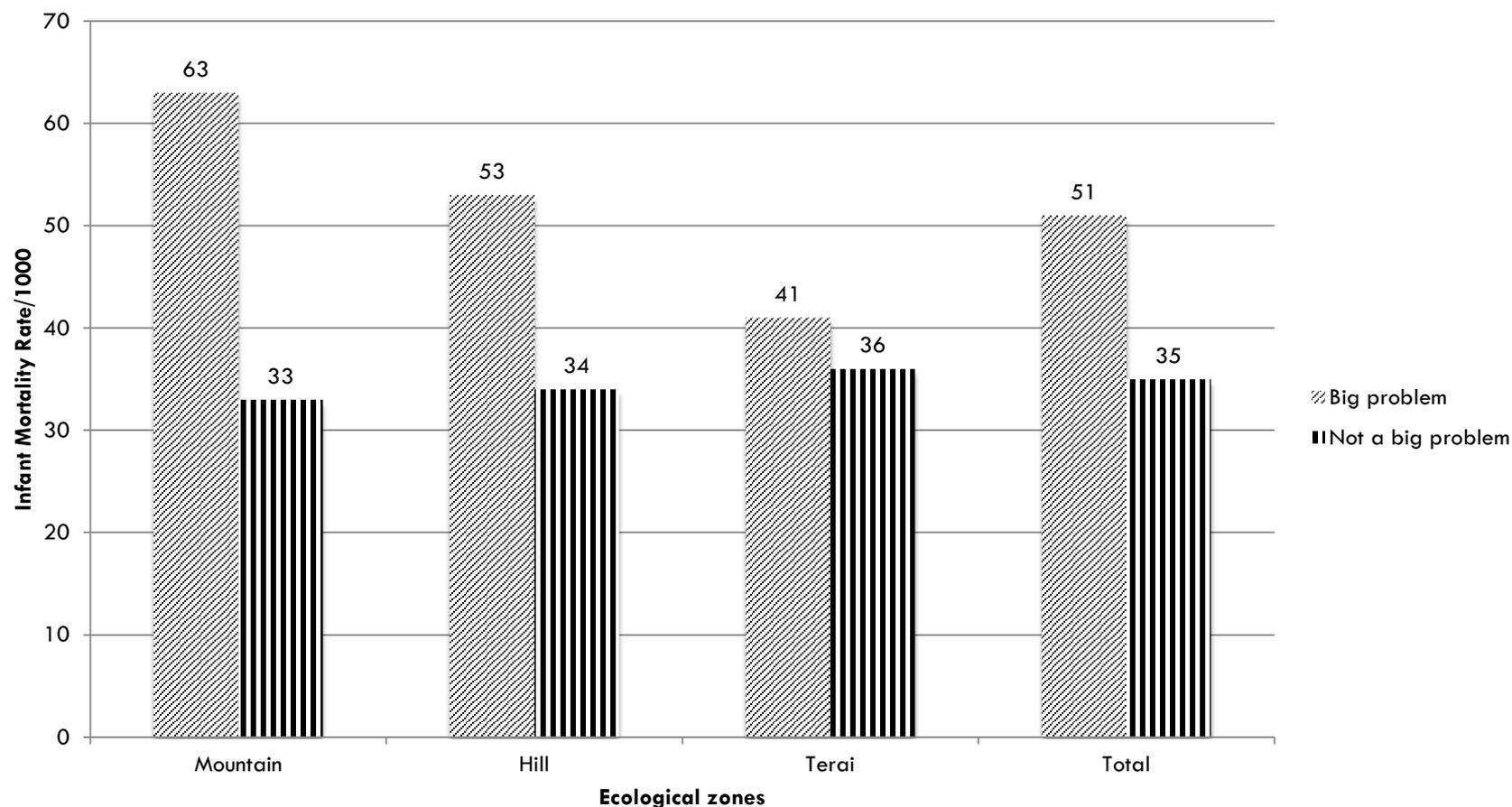
* P-value statistically significant at 0.05

Infant mortality rate in ecological zone based on distance to health facility, Nepal DHS 2006-2011 (Unweighted)

			Mountain	Hill	Terai
Distance to health facility	Big problem	N (%)	723 (70.8)	1283 (60)	981 (45.6)
		No. of Infant Death	46	68	41
		IMR (95% CI)	63 (45-81)	53 (40-65)	41 (29-54)
	Not a big problem	N (%)	297 (29.1)	852 (39.9)	1170 (54.3)
		No. of Infant Death	10	29	43
		IMR (95% CI)	33 (13-54)	34 (21-46)	36 (25-47)
Risk Ratio			1.9*	1.6*	1.1

* P-value of chi-square test statistically significant at 0.05

Infant mortality rate in different ecological zones based on perceived distance to health facility



Unadjusted and Adjusted Associations

- Perceived distance as a big problem: Mountain zone was a significant risk factor

Unadjusted- 1.55 (1.01-2.40), p-value: 0.04*

Adjusted- 1.57 (1.01-2.40), p-value: 0.04*

- Did not perceive distance as a big problem: Mountain zone was not a significant risk factor

Limitations

- Design of the study
- Recall bias
- No generalizability



Conclusions

- The excess risk of infant mortality in the Mountain zone is determined by many complex factors.
- This study identified importance of geographical access to a health facility.
- There is need of an interventions that would address the problem.

Acknowledgments

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Thank You!

