Reproductive Health Research
Opportunities and Choices

University of Southampton

Infant Death Clustering in India and sub-Saharan Africa

Background

Childhood mortality has declined in the past four decades in almost all countries. In recent years, the decline in child mortality levels has slowed down and in some countries reversed. It is speculated that the underlying reasons for the clustering of child health outcomes could be linked with a nation's health indicators and levels of social and economic development. This research tests this hypothesis with reference to infant mortality, using data from 16 states of India and 18 countries in sub-Saharan Africa. The study quantifies the degree of clustering of infant mortality.

Data and Methods

The 1998/99 National Family Health Survey from 16 states of India and 18 DHS data from sub-Saharan Africa conducted in 1995 or later are used to analyse the levels of death clustering in India and sub-Saharan Africa. A key feature of such clusters is that households and individuals within a cluster are geographically close such that health outcomes may be related because of a shared environment and similar health care access. For multi-country comparisons, another level of hierarchy is the state or country. Death clustering within families and within communities was quantified after using regression methods to controlling for a range of demographic and socio-economic factors including maternal age, birth type (singleton or multiple births), sex of the child,

preceding birth intervals, birth order, education, occupation and residential status and macro variables including percentage below poverty line, gross national income and female to male literacy rate.

Main Findings

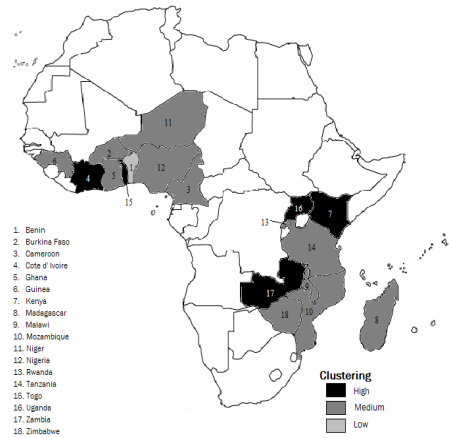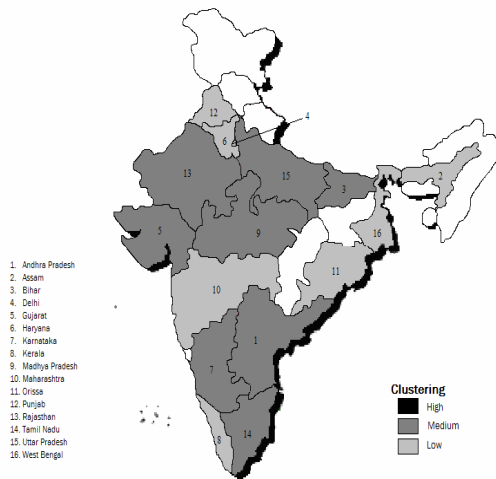Infant Mortality Rate for selected states of India and countries of Africa

Infant Mortality Rate
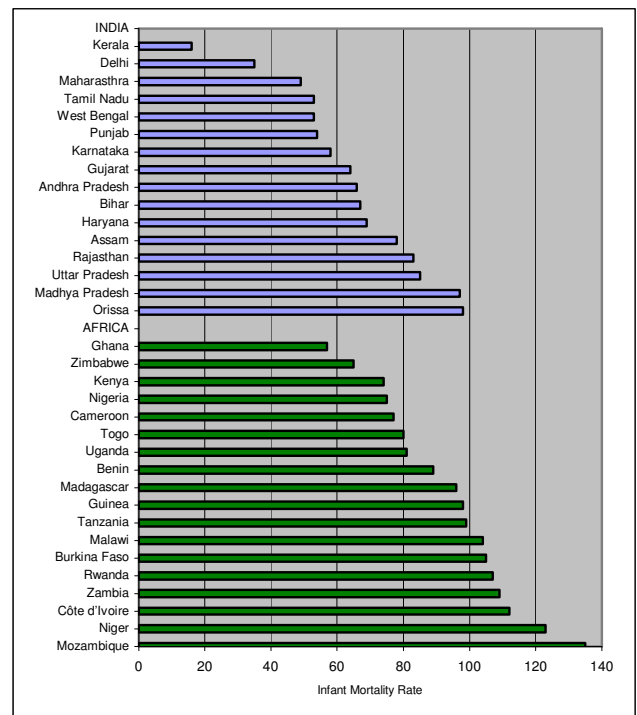
- Infant mortality rates are higher in the African countries than in the Indian states

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- For Africa, there is evidence of declining infant mortality in six countries and increasing infant mortality in Nigeria and Zimbabwe.
- In the Indian states of Karnataka and Maharashtra there was evidence of declining infant mortality

- Death clustering is higher and more pronounced in Africa than in India; the average intra-family correlation coefficient in Africa is about five per cent compared with one per cent in India.

- In Kenya and Côte d'Ivoire the intra-family correlation coefficient is about eleven per cent, while the highest for India is four per cent in Andhra Pradesh and Tamil Nadu.

Shaded maps below illustrate differences in infant death clustering between India and Africa. The maps show higher death clustering in Africa than India.

1. Benin
2. Burkina Faso
3. Cameroon
4. Cote d'Ivoire
5. Ghana
6. Guinea
7. Kenya
8. Madagascar
9. Malawi
10. Mozambique
11. Niger
12. Nigeria
13. Rwanda
14. Tanzania
15. Togo
16. Uganda
17. Zambia
18. Zimbabwe

Clustering
High
Medium
Low

Explanations for death clustering are complex.

- Death clustering is higher in those countries where fertility is high

- Infant death clustering is linked with HIV prevalence of a country. Infant death clustering is higher in those countries where HIV prevalence is high.

Policy Implication

- Since women who lose a child have a higher chance of subsequent child loses, intervention programmes to lower infant mortality should not only focus on individuals but on their children, families and communities as well.

- The link between HIV prevalence and death clustering suggests that reducing mother-to-child transmission may lower death clustering and infant mortality levels.

1. Andhra Pradesh
2. Assam
3. Bihar
4. Delhi
5. Gujarat
6. Haryana
7. Karnataka
8. Kerala
9. Madhya Pradesh
10. Maharashtra
11. Orissa
12. Punjab
13. Rajasthan
14. Tamil Nadu
15. Uttar Pradesh
16. West Bengal

Clustering
High
Medium
Low