Excess Fertility and Infant Mortality in Sub-Saharan Africa

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Background

- Sub-Saharan Africa has the world’s highest Infant Mortality Rate (IMR): 46/1,000 live births (2012)
- Substantial variation within SSA in IMR
- Reduced infant mortality is the major contributor of sustained fertility decline (Hetherington and Jones 2012)
- Importance of understanding decisions, variance, and disposition of infant mortality in SSA

- About 1/3 of Sub-Saharan African countries have stalled along the fertility transition (Shaw and Underwood 2008)

Conceptualization

- Parity is a key predictor of child health outcomes (Bongaarts 2011)
- Association between parity and infant mortality is conflicting (Muula et al. 2011; Upadhyay and Karasek 2012)
- Ideal family size has been found to be less subject to recall bias than pregnancy intention (Muula et al. 2011; Gipson et al. 2005; Shapiro-Mendoza et al. 2005)
-理想的家庭规模比怀孕意欲更少受回忆偏差的影响（Muula et al. 2011; Gipson et al. 2005; Shapiro-Mendoza et al. 2005）
- Association between parity and infant mortality is conflicting (Muula et al. 2011; Upadhyay and Karasek 2012)

Current Study

- The association between excess fertility level and a country’s fertility transition stage is noteworthy (Bongaarts 2003)
- Countries at different stages of the fertility transition and transition stages that have different levels of excess fertility
- In turn, they may have a different level of infant mortality
- Hypotheses
  1. Excess fertility is disproportionately susceptible to infant mortality
  2. Varying proportions of excess fertility do exist, but no evidence that this variation is associated with the inverted U-shaped association between stage of fertility decline and excess fertility
  3. The association between excess fertility and infant mortality is stronger than that between parity and infant mortality

Data and Methods: Country Selection

- One country from three stages of the transition, with data collected approximately at the same time

- Demographic and health surveys: 
  - Ethiopia (2005; 2008)

Data and Methods

- DHS Details
  - Household based survey
  - All women of reproductive age and children
  - Instruments are comparable across countries

- Analytic Sample
  - Mothers with a most recent birth 1-5 years prior to survey (to allow sufficient exposure to infant mortality)
  - Niger (2,013), Ethiopia (6,205), Namibia (2,808)

Main Findings

- Parity: First births in Niger (high fertility context) have greater odds of infant mortality compared to second and third births
- First births and very high parity births in Ethiopia (moderate fertility context) have greater odds of infant mortality compared to second and third births
- Higher parity births in Namibia (low fertility context) have greater odds of infant mortality compared to second and third births

Excess Fertility

- The differences in excess fertility percentages among the three countries is consistent with the inverted U-shaped association between stage of fertility decline and excess fertility
- No significant association found between excess fertility and infant mortality for any of the three countries

Conclusion

- No evidence that excess fertility is disproportionately susceptible to infant mortality
- Varying proportions of excess fertility do exist, but no evidence that this variation contributes to variation in IMRs
- Evidence that the association between parity and infant mortality is stronger than that between excess fertility and infant mortality

Limitations and Future Directions

- Limitations
  - Only three countries at three stages are examined
  - Infant mortality is a rare event, large sample size needed
  - Only looking at most recent births; infant mortality could occur for previous births
  - As with pregnancy intention, reported ideal family size can be subject to post- rationalization bias
- Future Directions
  - Excess fertility may be associated with child health outcomes other than infant mortality

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