Impact of Paid Maternity Leave on Infant Mortality in Low- and Middle-Income Countries

ARIJIT NANDI
(ARIJIT.NANDI@MCGILL.CA)
MCGILL UNIVERSITY, MONTREAL, CANADA
Effect of leave policies: empirical evidence

- Research in high-income countries suggests that maternity leave policies increase the duration of breastfeeding

- In high-income countries, paid maternity and parental leave policies are associated with better child health

- Limited evidence from low- and middle-income countries, although ecological work indicates positive associations between paid maternity leave, breastfeeding, and child health

Baker and Milligan (2008); Guendelman et al. (2009); Heymann et al. (2011); Heymann et al. (2013); Obguanu et al. (2011); Rossin (2011); Ruhm (2000); Scott et al. (2006); Tanaka (2005); Winegarden and Bracy (1995)
Potential mechanisms

- Labour polices
- Uptake of pre- & post-natal health services
- Prenatal maternity stress
- Health behaviors (i.e., breastfeeding, vaccination)
- Child health
The ideal (but infeasible) approach for measuring the health impact of paid maternity leave benefits would be to randomize different durations of paid leave across countries.

We used a quasi-experimental approach to measure the impact of an increase in the duration of paid leave on infant mortality.

Our study was the first to evaluate the impact of maternity leave on infant survival in low- and middle-income countries.

Nandi et al. (2016)
Measuring global trends in maternity leave

MATERNITY LEAVE POLICY data dashboard

Select Indicator

Filter Countries

Map - Paid Maternity Leave (weeks) - 2013

Bar Chart - Map Indicator

Description - Map Indicator

How many weeks of paid maternity leave is available to mothers of infants?
Paid maternity leave only includes leave that is available exclusively to mothers of infants. It does not include paid parental leave, which is leave that either parent of an infant can take, nor child care leave, which is generally much longer in duration and either unpaid or paid at a lower rate.

Statistics - Map Indicator

Count: 131.00
Mean: 14.12
Median: 12.90
Minimum: 0.00
Maximum: 52.00
Variance: 58.86
Standard Deviation: 7.67

Legend - Map Indicator

0 - 9
10 - 12
13 - 14
15 - 17
18 - 52
Measuring global trends in infant mortality

Child Health

1/2 of children age 18-29 months in the Dominican Republic have received all basic vaccinations.

- 2013 Dominican Republic DHS

TOOLS & RESOURCES

SURVEY SEARCH
SURVEY TYPES
DHS TOOLKIT
MIS TOOLKIT
E-LEARNING COURSE
DHS CURRICULUM
STUDENT RESOURCES
STATCOMPILER
DOWNLOAD DATASETS
DHS USER FORUM
DHS API
MOBILE APPLICATIONS
SPATIAL DATA REPOSITORY
PUBLICATIONS SEARCH
MEDIA INFO
COUNTRY QUICKSTATS
We used the DHS to assemble a panel of approximately 300,000 live births in 20 countries from 2000 to 2008.

These countries administered at least two surveys between 2001 and 2011, which facilitated analyses of policy reforms.

DHS data contain information on infant mortality and other demographic, socioeconomic and reproductive characteristics.
## Samples of treated and control countries

<table>
<thead>
<tr>
<th>Country</th>
<th>DHS Survey Years</th>
<th>Infant Sample</th>
<th>Neonatal Sample</th>
<th>Post-Neonatal Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Number of Births</td>
<td>Weighted Percent Death</td>
<td>Number of Births</td>
</tr>
<tr>
<td><strong>Treated countries</strong>&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bangladesh</td>
<td>2004, 2007, 2011</td>
<td>11,739</td>
<td>5.98%</td>
<td>13,943</td>
</tr>
<tr>
<td>Kenya</td>
<td>2003, 2008</td>
<td>9,547</td>
<td>6.04%</td>
<td>9,015</td>
</tr>
<tr>
<td>Lesotho</td>
<td>2004, 2009</td>
<td>5,774</td>
<td>8.74%</td>
<td>6,696</td>
</tr>
<tr>
<td>Uganda</td>
<td>2006, 2011</td>
<td>13,093</td>
<td>6.79%</td>
<td>15,330</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>2005, 2010</td>
<td>8,035</td>
<td>5.54%</td>
<td>8,955</td>
</tr>
<tr>
<td>All treated countries</td>
<td></td>
<td>48,188</td>
<td>6.08%</td>
<td>53,939</td>
</tr>
<tr>
<td><strong>Control countries</strong>&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Armenia</td>
<td>2005, 2010</td>
<td>2,211</td>
<td>2.15%</td>
<td>2,450</td>
</tr>
<tr>
<td>Bolivia</td>
<td>2003, 2008</td>
<td>13,539</td>
<td>5.03%</td>
<td>14,742</td>
</tr>
<tr>
<td>Colombia</td>
<td>2005, 2010</td>
<td>26,023</td>
<td>1.84%</td>
<td>26,607</td>
</tr>
<tr>
<td>Egypt</td>
<td>2005, 2008</td>
<td>18,376</td>
<td>2.81%</td>
<td>19,595</td>
</tr>
<tr>
<td>Ghana</td>
<td>2003, 2008</td>
<td>5,008</td>
<td>5.26%</td>
<td>5,460</td>
</tr>
<tr>
<td>Honduras</td>
<td>2005, 2011</td>
<td>17,319</td>
<td>2.51%</td>
<td>19,341</td>
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<tr>
<td>Cambodia</td>
<td>2005, 2010</td>
<td>13,352</td>
<td>6.38%</td>
<td>14,710</td>
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<tr>
<td>Madagascar</td>
<td>2003, 2008</td>
<td>15,452</td>
<td>5.22%</td>
<td>15,715</td>
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<tr>
<td>Malawi</td>
<td>2004, 2010</td>
<td>25,165</td>
<td>6.89%</td>
<td>28,857</td>
</tr>
<tr>
<td>Nigeria</td>
<td>2003, 2008</td>
<td>32,683</td>
<td>7.98%</td>
<td>35,137</td>
</tr>
<tr>
<td>Nepal</td>
<td>2006, 2011</td>
<td>9,342</td>
<td>4.59%</td>
<td>9,506</td>
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<tr>
<td>Philippines</td>
<td>2003, 2008</td>
<td>10,622</td>
<td>2.86%</td>
<td>11,064</td>
</tr>
<tr>
<td>Rwanda</td>
<td>2005, 2010</td>
<td>14,329</td>
<td>7.06%</td>
<td>15,130</td>
</tr>
<tr>
<td>Senegal</td>
<td>2005, 2010</td>
<td>17,958</td>
<td>5.69%</td>
<td>18,845</td>
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<tr>
<td>Tanzania</td>
<td>2004, 2010</td>
<td>13,184</td>
<td>5.96%</td>
<td>13,103</td>
</tr>
<tr>
<td>All control countries</td>
<td></td>
<td>234,563</td>
<td>5.16%</td>
<td>250,262</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>282,751</td>
<td>5.52%</td>
<td>304,201</td>
</tr>
</tbody>
</table>
Statistical approach

- We estimated the effect of an additional month of paid maternity leave in the prior year on the probabilities of infant, neonatal, and post-neonatal mortality.

- We used a *difference-in-differences* approach, which compares trends in mortality in treated countries that increased the duration of paid maternity leave to those that did not (controls).

- Fixed effects for country and year control for unobserved time-invariant confounders that varied across countries and shared temporal trends in mortality, respectively.
Increased leave lowered infant mortality

*results were robust to adjustment for individual, household, and country-level characteristics, including the wage replacement rate, GDP per capita, female labor force participation, government health expenditure per capita, and total health expenditure per capita.
Other findings

- The beneficial impact of more generous maternity leave policies seemed concentrated in the post-neonatal period.

- The benefits of additional paid maternity leave were larger when shorter durations of paid leave were available.

- Our other work shows that extending the duration of leave was associated with vaccination uptake, which may be one mechanism explaining the impact of leave on infant mortality.

Hajizadeh et al. (2015)
Conclusions and future directions

- Research including many higher and lower-income countries now suggests that extending the duration of paid leave available to new mothers benefits infant health.

- However, few studies have included countries from Southeast Asia and our findings may not be generalizable to this region.

- Future work should evaluate the impact of recent reforms (i.e., in Vietnam) on health and health behaviors in Southeast Asia.
Thanks!

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References cited