THE ECONOMIC VALUE OF BREASTFEEDING

Four Perspectives for Policymakers

prepared by the
Center to Prevent
Childhood Malnutrition
for the
Social Sector Policy
Analysis Project
of the
Agency for International Development
operated by the
Academy for Educational Development
THE ECONOMIC VALUE OF BREASTFEEDING:
This booklet is intended to introduce the notion of breastmilk as an economic resource, to suggest the range of economic activities on which it impacts, and to present illustrative experiences from around the world.

Policymakers will find information summarized here on the costs of breastfeeding and bottlefeeding from four developing country perspectives:

- the **national perspective** refers to the aggregate costs to a nation of alternative infant feeding practices
- the **public sector** is distinct from the national perspective, and comprises the full range of government-supported agencies and programs
- **hospitals** and **households**.

From each perspective, both breastfeeding and bottlefeeding carry with them direct costs (the time and materials required) and indirect costs (the health and fertility effects associated with each mode of infant feeding).
COSTS OF BREASTFEEDING
- potential loss of women's economic productivity, if breastfeeding conflicts with participation in the labor force

COSTS OF BOTTLEFEEDING
- aggregate expenditures on breastmilk substitutes and supplies
- infant and child lives lost

Annual National Expenditures for Breastmilk Substitute Imports

Sources: Berg (1973); Garcia et al. (1985)
How much money is needed to replace breastmilk when the prevalence of breastfeeding declines?

CAGES: In Singapore, an additional $1.8 million was required to pay for breastmilk substitutes when the prevalence of breastfeeding (at 3 months) fell from 71% to 42%.

An additional $16 million was spent on breastmilk substitutes in the Philippines when the prevalence of breastfeeding dropped by 31%.

Source: Berg (1975)

What resources would be needed to replace currently produced breastmilk?

CAGES: Indonesia would need $62 million
Tanzania would need $22 million
Papua New Guinea would need $12.5 million
India would need an additional 114 million lactating cattle
... and worldwide, $15 billion would be required to feed the 120 million infants each year.

Sources: Ronde (1982); Latham (1975); Marshall (1983); Jelliffe and Jelliffe (1975)
Relative Mortality Risk Due to Diarrhea, by Feeding Mode
In Porto Alegre and Pelotas, Brazil (age 0–12 months)

Source: Victora et al. (1987)
How many deaths from diarrheal disease and acute respiratory infection currently are averted by breastfeeding?

Infant Lives "Saved" by Breastfeeding (by Region)

- Asia: 3,326,400
- Latin America/Caribbean: 411,000
- China: 178,000
- Middle East/North Africa: 1,066,800
- Africa: 2,113,000

Total = 7,095,200

Source: Levine et al. (1990)
COSTS OF BREASTFEEDING
- costs of breastfeeding promotion activities (mass campaigns and promotion in public health care institutions)
- potential loss of tax revenues from local breastmilk substitute manufacturers

COSTS OF BOTTLEFEEDING
- expenditures for breastmilk substitutes and supplies by government institutions (see The Hospital Perspective for details)
- public health care costs
- family planning costs
- interest on debt incurred by importation of breastmilk
Breastfeeding prevents the occurrence of malnutrition, diarrheal disease and other infectious diseases in many settings.

CASE: Among 2-month-old infants in the Philippines, those not breastfed were 18.5 times as likely to contract diarrheal disease as those who were exclusively breastfed.

![Risk of Diarrhea by Feeding Mode in Philippines](chart)

Source: Popkin et al. (1990)

What is the effect of breastfeeding on public health care costs?

CASE: In Indonesia, a 25% reduction in the number of mothers who breastfeed would result in costs of an additional $40 million in diarrheal disease treatment (20% of the nation's health budget).

Source: Rohde (1982)
THE PUBLIC SECTOR PERSPECTIVE . . .

Exclusive breastfeeding during the first six months contributes to the reduction of total potential fertility.

CASES: ■ Temporary infertility associated with breastfeeding is considered to be responsible for reducing total potential fertility by nearly 7 births per woman in Bangladesh, and around 5 births per woman in Indonesia and Senegal.
■ Breastfeeding is responsible for reducing total potential fertility by 54% in Africa, 30% in Asia, and 16% in the Americas.
■ If current duration of breastfeeding declined by one-half, total fertility would increase by approximately 30% in Ghana, Senegal and Nepal, 17% in Haiti, and 27% in Indonesia.

Sources: World Bank (1989); Thapa et al (1988)

What is the effect of breastfeeding on family planning costs?

CASE: In Indonesia, to achieve a similar reduction in fertility, an additional $80 million would have to be spent on family planning activities if there were no breastfeeding.

Source: Rohde (1982)
COSTS OF BREASTFEEDING

- staff training
- education and support of new mothers
- modification of the physical plant to allow rooming-in

COSTS OF BOTTLEFEEDING

- staff time for preparation and feeding
- expenditures on breast milk substitutes and supplies (bottles, glucose water, pharmaceuticals such as uterine-contracting oxytocin, used after delivery, etc.)
- increased hospital stay and health care costs
THE HOSPITAL PERSPECTIVE...

Costs of Changes in Hospital Practices to Promote Breastfeeding

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>SITE</th>
<th>COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>promotion &amp; conference</td>
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<td>$4.5 per trainee</td>
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<tr>
<td></td>
<td>Panama</td>
<td>$0.01–1.00 per birth*</td>
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<tr>
<td></td>
<td>Ecuador</td>
<td>$163 per trainee</td>
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<td></td>
<td>Ethiopia/Liberia</td>
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<td></td>
<td>Colombia</td>
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<tr>
<td>staff training</td>
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<td>$10–860 per trainee</td>
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<td></td>
<td>Panama</td>
<td>$0.05–1.40 per birth</td>
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<td>Honduras</td>
<td>$10–60 per trainee</td>
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<td>El Salvador</td>
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<tr>
<td>lactation counseling</td>
<td>hypothetical</td>
<td>$0.35–4.00 per trainee</td>
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<td></td>
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<td>$0.55–4.00 per birth</td>
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<td>rooming-in</td>
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<tr>
<td></td>
<td>Indonesia</td>
<td>$0</td>
</tr>
</tbody>
</table>

*The cost per birth depends on the size of the hospital and the patient/staff ratio.

Source: Levine and Huffman (1990) (original sources cited)
**THE HOSPITAL PERSPECTIVE . . .**

_Savings Associated with Changes in Hospital Practices to Promote Breastfeeding_

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>SITE</th>
<th>SAVINGS</th>
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<td>less staff time</td>
<td>Philippines</td>
<td>$1.20 per birth</td>
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<tr>
<td>with rooming-in</td>
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<td></td>
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<tr>
<td>less infant formula</td>
<td>Honduras</td>
<td>$1.20 per birth</td>
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<tr>
<td></td>
<td>Philippines</td>
<td>$0.80 per birth</td>
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<tr>
<td>fewer bottles</td>
<td>Philippines</td>
<td>$0.32 per birth</td>
</tr>
</tbody>
</table>

Source: Levine and Huffman (1990) (original sources cited)
COSTS OF BREASTFEEDING
- maternal time for feeding and lost employment opportunities
- maternal nutritional supplementation

COSTS OF BOTTLEFEEDING
- caretaker’s time for preparation of breastmilk substitutes and feeding, and care of bottlefeeding-related illness in children
- expenditures on breastmilk substitutes and supplies (including fuel)
- potential loss in child’s economic contribution due to ill health
- expenditures associated with higher fertility, or increased use of contraceptives

Percentage of Income Spent to Feed Baby with Infant Formula In First Year
Percentage of Annual Minimum Urban Wage

Source: IBFAN, 1989
The cost of additional food for breastfeeding mothers is relatively low, compared to the cost of breastmilk substitutes.

**CASE:** In the Côte d’Ivoire, additional food for a breastfeeding mother would cost $51-102 per year. We can compare this with the goods cost of artificial feeding for an infant (including breastmilk substitutes, supplies and fuel), which would total $305-390 per year. The goods cost of artificial feeding exceeds that of breastfeeding by at least three times.
SOURCE LIST


