Social determinants in health: The Brazilian case

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Ministry of Social Development and Fight Against Hunger
1. Health inequalities in Brazil
   Socioeconomic & demographic determinants
   Major inequalities in health

2. Public policies targeting health inequalities - some examples:
   The Family Health Program (PSF)
   The Bolsa Familia Program (PBF)

3. Social determinants in health committee
Health Inequalities in Brazil:

Socioeconomic & demographic determinants
Brazil in South America

- **Population:** 180 millions
- **Area:** 8.514.215,3 km²
- **26 States and the Federal District (5 regions):**
- **5,900 municipalities**
- **Poor families:** around 11 million (44 million people)
- **Extremely poor families:** around 4,5 million

Source: Ministry of Social Development and Fight Against Hunger
Brazilian regions: much more than just geographic limits
Income inequalities

Income distribution for the poorest 50% and for the richest 1% in relation to total income – 2002

The Gini Coefficient in 2002 = 0.589

Source: IBGE (Brazilian Institute of Geography and Statistics) and IPEA (Institute of Research on Applied Economy)
Illiteracy inequalities: regions

Illiteracy rate for people $\geq 15$ years old - 2002

Source: IBGE (Brazilian Institute of Geography and Statistics) & MDS
## Illiteracy inequalities: trends

### % children between 7-14 years old attending fundamental school

<table>
<thead>
<tr>
<th>Estates</th>
<th>1991</th>
<th>2000</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alagoas</td>
<td>59.03</td>
<td>84.07</td>
<td>25.04</td>
</tr>
<tr>
<td>Bahia</td>
<td>61.54</td>
<td>86.10</td>
<td>24.56</td>
</tr>
<tr>
<td>Paraíba</td>
<td>62.88</td>
<td>88.62</td>
<td>25.74</td>
</tr>
<tr>
<td>Rio Janeiro</td>
<td>83.84</td>
<td>89.92</td>
<td>6.08</td>
</tr>
<tr>
<td>São Paulo</td>
<td>87.85</td>
<td>93.56</td>
<td>5.71</td>
</tr>
<tr>
<td>Dist. Federal</td>
<td>90.54</td>
<td>92.11</td>
<td>1.57</td>
</tr>
</tbody>
</table>

Source: IBGE (Brazilian Institute of Geography and Statistics)
Fertility rate inequalities: regions and trends

Source: IBGE (Brazilian Institute of Geography and Statistics)
Fertility rate inequalities: regions

Taxa de fecundidade
Número médio de filhos nascidos vivos, tidos por uma mulher ao final do seu período reprodutivo, na população residente em determinado espaço geográfico
Fonte: Censo demográfico de 2000, Instituto Brasileiro de Geografia e Estatística (IBGE)
### Age specific fertility rate (per 1.000)

<table>
<thead>
<tr>
<th>Age</th>
<th>1970</th>
<th>1980</th>
<th>1991</th>
<th>2000</th>
<th>Variation %</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-19</td>
<td>74,8</td>
<td>79,8</td>
<td>76,9</td>
<td>85,1</td>
<td>14%</td>
</tr>
<tr>
<td>20-24</td>
<td>254,6</td>
<td>213,1</td>
<td>163,7</td>
<td>145,8</td>
<td>-43%</td>
</tr>
<tr>
<td>25-29</td>
<td>295</td>
<td>226</td>
<td>148,2</td>
<td>117,6</td>
<td>-60%</td>
</tr>
<tr>
<td>30-34</td>
<td>242,9</td>
<td>173,1</td>
<td>93,9</td>
<td>69,8</td>
<td>-71%</td>
</tr>
<tr>
<td>35-39</td>
<td>131,2</td>
<td>117</td>
<td>47,3</td>
<td>34,4</td>
<td>-74%</td>
</tr>
<tr>
<td>40-44</td>
<td>35</td>
<td>53,7</td>
<td>17,2</td>
<td>10,6</td>
<td>-70%</td>
</tr>
<tr>
<td>45 e+</td>
<td>22,3</td>
<td>10,8</td>
<td>3,1</td>
<td>1,5</td>
<td>-93%</td>
</tr>
</tbody>
</table>

Source: IBGE (Brazilian Institute of Geography and Statistics)
Life expectancy inequalities: gender and trends

- Life expectancy for females in 1991: 69.7 years
- Life expectancy for females in 1999: 72.3 years
- Life expectancy for males in 1991: 62.2 years
- Life expectancy for males in 1999: 64.3 years

Ratio 1991: 1.11
Ratio 1999: 1.1

6 years = 2.1 years = 3.4%

69.7 years
72.3 years
66.0
74.0
64.0
72.0
62.0
70.0
60.0

Feminina
Masculina
Linear (Feminina)
Linear (Masculina)
## Life Expectancy inequalities: regions and trends

<table>
<thead>
<tr>
<th>Regions</th>
<th>1980</th>
<th>2000</th>
<th>variation (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>61,7</td>
<td>68,6</td>
<td>6,9</td>
</tr>
<tr>
<td>North</td>
<td>61,3</td>
<td>68,5</td>
<td>7,2</td>
</tr>
<tr>
<td>Northeast</td>
<td>58,7</td>
<td>65,8</td>
<td>7,1</td>
</tr>
<tr>
<td>Southeast</td>
<td>64,5</td>
<td>69,6</td>
<td>5,1</td>
</tr>
<tr>
<td>South</td>
<td>65,3</td>
<td>71,0</td>
<td>5,7</td>
</tr>
<tr>
<td>C-West</td>
<td>63,5</td>
<td>69,4</td>
<td>5,9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Regions</th>
<th>&lt;15</th>
<th>15 - 64</th>
<th>65&amp;+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brasil</td>
<td>-22.51</td>
<td>11.90</td>
<td>45.96</td>
</tr>
<tr>
<td>North</td>
<td>-19.19</td>
<td>15.83</td>
<td>32.00</td>
</tr>
<tr>
<td>Northeast</td>
<td>-23.98</td>
<td>17.41</td>
<td>32.89</td>
</tr>
<tr>
<td>Southeast</td>
<td>-21.77</td>
<td>8.64</td>
<td>52.23</td>
</tr>
<tr>
<td>South</td>
<td>-24.03</td>
<td>10.70</td>
<td>61.99</td>
</tr>
<tr>
<td>C-West</td>
<td>-27.02</td>
<td>16.93</td>
<td>62.88</td>
</tr>
</tbody>
</table>

Source: IBGE (Brazilian Institute of Geography and Statistics)
Population aging inequalities: regions and trends

Estrutura etária seg. anos

BRAZIL

NORTH

1980

1991

2000
Health inequalities

Examples: IMR, Homicides and Obesity
Distribuição relativa da mortalidade por grupo de causa.
Belo Horizonte, Minas Gerais, Brasil, 1900-1995.

Paes-Sousa, 2002
Infant Mortality Rate, BRAZIL, 1980-2001

Source: IBGE (Brazilian Institute of Geography and Statistics) - SVS - MoH
Proportional Infant Mortality, Brazil, 1980, 1990 e 2000

Source: SVS – MoH
Infant mortality rate inequalities: regions

Source: IBGE (Brazilian Institute of Geography and Statistics) - SVS – MoH - 2001
Infant mortality rate inequalities: states

óbitos por 1.000 nv

Source: Duarte, et al. 2001

Brazil South Southeast C-West North Northeast
IMR inequalities: regions and trends

Infant Mortality Rate, 1997-2001

<table>
<thead>
<tr>
<th>Grandes regiões e estados</th>
<th>1997</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>Variação</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brasil</td>
<td>31,9</td>
<td>30,8</td>
<td>29,1</td>
<td>28,2</td>
<td>27,4</td>
<td>-14,1</td>
</tr>
<tr>
<td>Norte</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nordeste</td>
<td>32,1</td>
<td>30,9</td>
<td>29,9</td>
<td>29,0</td>
<td>28,1</td>
<td>-12,4</td>
</tr>
<tr>
<td>Sudeste</td>
<td>22,8</td>
<td>21,4</td>
<td>19,8</td>
<td>19,1</td>
<td>18,2</td>
<td>-20,2</td>
</tr>
<tr>
<td>Sul</td>
<td>17,5</td>
<td>18,7</td>
<td>17,2</td>
<td>17,1</td>
<td>16,4</td>
<td>-6,5</td>
</tr>
<tr>
<td>Centro-Oeste</td>
<td>24,3</td>
<td>23,4</td>
<td>22,6</td>
<td>21,0</td>
<td>20,9</td>
<td>-14,0</td>
</tr>
</tbody>
</table>

Source: IBGE (Brazilian Institute of Geography and Statistics) - SVS – MoH
IMR inequalities: trends

Lorenz curve, 1996

Lorenz curve, 2002
IMR Inequalities: poverty

Cumulative number of still births (%) sorted by state poverty rates

Source: Duarte, et al. 2001
IMR Inequalities: illiteracy

Agregates of states by quartiles of female illiteracy rates

Source: Duarte, et al. 2001
Homicide Mortality Inequalities: regions and trends

Rate in man 30 – 39 years of age (per 100,000)

Source: SVS – MoH
Homicide inequalities: regions and trends

rate in man 30 – 39 years of age (per 100,000)

<table>
<thead>
<tr>
<th>Regions</th>
<th>Rate 1981</th>
<th>Rate 2001</th>
<th>Ratio 1981: 1.9</th>
<th>Ratio 2001: 3.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norte</td>
<td>59.1</td>
<td>76.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nordeste</td>
<td>57.6</td>
<td>74.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Centro-Oeste</td>
<td>66.2</td>
<td>85.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sudeste</td>
<td>71.6</td>
<td>153.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sul</td>
<td>37.0</td>
<td>48.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: SVS – MoH
Correlation between homicide rates and urbanization

Homicide inequalities: urbanization
Risk factor Inequalities: gender

Obesity and overweight prevalence (adults) - Americas

Source: WHO Global Database on Body Mass Index (BMI)
Risk factor Inequality: trends

Obesity and poverty: Prevalence among women from Southeast (Brazil): 1975-1997

Source: Monteiro et al, 2000
Public policies targeting health inequalities, some examples:

The Family Health Program (PSF)
The Bolsa Familia Program (BFP)
The Health System in Brazil (SUS)

Total Population: 180 millions

SUS users = 75% of overall population:

134,212,651

(2,03 bilhões de procedimentos ambulatoriais /ano
11,6 milhões de internações/ano)
The family health program

A change of the primary care model:

AIM

Organization of the primary care as the entrance door for SUS

Access amplification (targeting specially the poorest)

Qualification of the practices
Family Health Program Coverage: 2005

Nº EQUIPES – 21.939
Nº MUNICÍPIOS - 4.707

Nº AGENTES – 196.009
Nº MUNICÍPIOS - 5.110

Nº EQUIPES DE SAÚDE
BUCAL – 9.781
Nº MUNICÍPIOS – 3.346
## Incentivos Financeiros Transferidos à SF, PACS e SB

<table>
<thead>
<tr>
<th>ANO</th>
<th>ORÇAMENTO</th>
<th>EXECUÇÃO</th>
<th>% EXECUTADO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>R$ 201.000.000,00</td>
<td>R$ 143.763.058,42</td>
<td>71,52</td>
</tr>
<tr>
<td>1999</td>
<td>R$ 378.999.286,00</td>
<td>R$ 306.583.162,50</td>
<td>80,89</td>
</tr>
<tr>
<td>2000</td>
<td>R$ 680.000.000,00</td>
<td>R$ 648.500.575,97</td>
<td>95,37</td>
</tr>
<tr>
<td>2001</td>
<td>R$ 970.000.000,00</td>
<td>R$ 857.778.827,63</td>
<td>88,43</td>
</tr>
<tr>
<td>2002</td>
<td>R$ 1.350.000.000,00</td>
<td>R$ 1.204.978.139,88</td>
<td>89,25</td>
</tr>
<tr>
<td>2003</td>
<td>R$ 1.680.000.000,00</td>
<td>R$ 1.655.722.702,97</td>
<td>98,55</td>
</tr>
<tr>
<td>2004</td>
<td>R$ 2.071.000.000,00</td>
<td>R$ 2.071.000.000,00</td>
<td>100,00</td>
</tr>
<tr>
<td>2005</td>
<td>R$ 2.349.794.994,00</td>
<td>US$ 860,000,000,00</td>
<td></td>
</tr>
</tbody>
</table>

2005 US$2.250.000.000,00 ATENÇÃO BÁSICA EM SAÚDE
Family Health Program
Population Coverage (%), Brasil, 1998 a 2004

Fonte: SIAB
*Situação em julho de cada ano referido
IMR trends within PSF areas, Brazil, 1999 - 2003

Similar results from Macinko et al, 2005
IMR trends within PSF areas, Brazil, 1999 - 2003

Similar evidences from:
Macinko J & Marinho MF, 2005
New York University & Health Ministry-DASIS

Impact of the FHP on infant mortality rates (specially due to decreasing in diarrhea mortality):

after adjusting for other IMR determinants (water supply, sanitation, presence of other health professionals, etc)

in all Brazilian regions (but higher impact in the less developed regions).
PROESF:
Expansion of the Family Health Program 2005

Municipalities with >100 thousand inhabitants
210 municipalities
US$ 550 millions

Monitoring and evaluation program:
State Health Secretaries
US$500,000.00
Ministry of Social Development and Fight Against Hunger

The Evaluation and Monitoring of Social Development Policies

Romulo Paes de Sousa
Secretary of Evaluation and Information Management

Brasilia, 2005 march
Fome Zero (Zero Hunger)

- A public policy which places hunger not as an individual fatality, but as a national matter.
- Set of public and social policies which articulates government and non-government actions towards the eradication of hunger and the promotion of social inclusion in Brazil.
- Express the Federal Government’s decision of placing the fight against hunger at the core of national political agenda.
- The Bolsa-Familia Program is one of the main actions of Fome Zero (Zero Hunger).
**Beneficiaries’ Selection Criteria and Cash Transfer Values**

**Extremely poor families:**
- Household monthly per capita income below US$ 20
- Fixed benefit: US$ 20
- Variable benefit: up to US$ 18
- Children 0-15 age group: US$ 6

**Poor families:**
- Household monthly per capita income between US$ 20 and US$ 40
- Variable Benefit: up to US$ 18

*Exchange Rate 05/19/05  1US$ = R$ 2,50
The Bolsa Família Program

Conditional cash transfer program that works in two dimensions:

- Alleviation of poverty immediately, through the provision of monetary transfers; and

- Eradication of poverty and promotion of social inclusion, through the basic social rights (such as health and education) and through access to complementary policies.
### Condicionalities (FAMILIES)

| Health                           | Pregnant and lactating women:  
|                                 | - Pre-natal and post-natal health visits  
|                                 | Children under 7 years old:  
|                                 | - Vaccines up to date  
| Education                       | School attendance for children in the 6-15 age group  

The Federal Government Investment in Social Welfare

Gastos do Governo Federal - Transferências de Renda Bolsa Família e Benefício de Prestação Continuada (BPC) / Renda Mensal Vitalícia (RMV) para Idosos e Portadores de Deficiência - 2001 a 2005

US $1 = R$ 2.67 (March, 03, 2005) Source: Ministry of Social Development and Fight Against Hunger
Outcomes
ABR/2005

5,537 municipalities – 99.6% of Brazilian municipalities

7 million families

28 million people
The Impact of the Bolsa Família Program on the life of beneficiaries

In 2004, a pool with the beneficiaries was carried through, which enhanced:

- the necessity of the benefit due to the lack of access to the remunerated work

- the impact on food security

- the importance of the regularity of the benefit in the organization of the familiar budget

- the importance of the benefit for the local commerce

- commitment on the part of the children: to go to the school has become a way to help improve the family income
What are the health inequity main determinants? Do we know all?

Do we need to know all before start action?

What works?

How to solve methodology difficulties in studying health inequalities?

What others governments are doing?

Is the health system a protective factor against health inequity or a risk factor?

To help the fulfillment of the gaps in knowledge.

Advocacy based on evidences already available.

To help the evaluations of program impacts on health inequities.

Provide some methodological guidance: measurement, reverse causality bias, confounding, high collinearity ...

Observatory of governmental experiences or forums for exchanging experiences.

Brings the focus on the health sector responsibilities.