Demography India (2015) ISSN: 0970-454X
Vol.44, Issue: 1&2, pp: 136-139

Commentary

Population Health and Economic Development: Time Frames and Policy Goals

Alok Bhargava[1]

Abstract

Economic development is a complex process and entails reductions in child mortality, improvements in children's physical and cognitive development, increases in life expectancy, and production of goods and services reflecting a high "value added" of the labour force. It is therefore critical to adopt a long-term perspective in formulating health and education policies. It is argued that it will take at least four decades for sub-Saharan African countries to achieve low child mortality rates prevailing in developed countries. Moreover, higher school attainment by children and the future supply of skilled labour depend on the quality of diets and educational infrastructure that are inadequate in most developing countries. Lastly, it is important that economic development is sustainable and does not exert excessive environmental pressures adding to the burden of diseases.

Introduction

Economic development is a complex dynamic process and entails reductions in child mortality, improvements in children's physical and cognitive development, increases in life expectancy and population health, and production of goods and services that reflect a high "value added" of the labour force. While policy makers in international organizations and developing countries may strive to achieve such goals, there are intricacies in simultaneously influencing the diverse factors affecting economic development. Thus, academic and policy debates often focus on a subset of factors for speeding up economic development. For example, the annual newsletter of the Gates Foundation claimed that "By 2035, there will be almost no poor countries left in the world" (Gates Foundation, 2014). According to the projections underlying this report (Jamison et al., 2013), child mortality in poor countries can be brought down to the U.S. levels by 2035. These overly optimistic projections are based on unrealistic and untenable assumptions. While there is a compelling case for improving population health for enhancing economic development (Bhargava et al., 2001), it is important to set realistic targets and outline the necessary time frames for achieving the policy goals.

Reducing infant and child mortality rates in developing countries

Infant and child mortality rates have declined in most developing countries due to greater utilization of antenatal care and medically supervised deliveries. For example, infant (under one year) mortality rate was estimated to be 15 per 1000 live births for the Indian state of Kerala where 94% of pregnant women visited antenatal clinics at least thrice (National Family Health Survey-3, 2007). In contrast, the corresponding figure was 73 for the populous state of Uttar Pradesh where only 27% of pregnant women visited clinics. Moreover, the role of high fertility rates in exacerbating infant mortality especially at higher birth orders has not been sufficiently recognized (Bhargava, 2008). Children from large poor families have lower immunization rates (National Family Health Survey-3, 2007) so that health policies promoting birth spacing, supervised deliveries, and timely immunizations are likely to have the greatest impact for reducing child mortality. This is especially important for sub-Saharan African countries; data from the World Development Indicators (2014) in the Table show that in 2010, mean and median number of children (per 1000 live births) dying before reaching the age of one year were 65 and 61, respectively. The underlying trend in infant mortality from 1980-

[1]Professor, University of Maryland School of Public Policy, College Park, MD 20742, USA.
Email: Bhargava@umd.edu

2010 exhibited a 40% decline, *i.e.*, approximately 1.3% decline per annum. While declines in infant mortality rates are likely to be slower after crossing certain thresholds, even on the basis of linear projections, it will take at least 40 years to attain 10 infant deaths per 1000 live births, as in developed countries.

Further, there are difficulties in lowering infant mortality rates beyond certain thresholds due to socioeconomic factors especially in sub-Saharan Africa. For example, while infant mortality rate was 13 per 1000 births in 2010 in the tiny Republic of Mauritius, the corresponding figure for South Africa, that is a relatively developed country, was 36 (see the Table). It is often difficult to provide antenatal and postnatal healthcare to women in remote areas due to poor physical and healthcare infrastructures and the lack of qualified medical staff. In addition, emigration of physicians from sub-Saharan Africa to OECD countries in the wake of the AIDS pandemic is leading to staff shortages that can increase deaths due to AIDS (Bhargava and Docquier, 2008). While it is important to enhance the access to healthcare in developing countries, it seems implausible that even in four decades child mortality rates will approach the levels achieved in developed countries.

Children's physical and cognitive development and economic productivity

For accelerating the pace of economic development, it is important to enhance children's physical and cognitive development that is gradually affected by quality of diets reflected in the intakes of protein and micronutrients (Bhargava, 2015). While physical growth is important for increasing labour productivity as children turn into adults, it is critical in the age of globalization to educate children and ensure that they complete at least high school education for joining the skilled labour force. Furthermore, iron status is important for cognitive development and requires higher intakes of animal products that are good sources of heme iron. However, many poor households are unable to afford regular consumption of such foods. Moreover, educational infrastructure needs to be stimulating for children to acquire analytical skills.

While it is difficult to monitor children's learning in developing countries, data on enrollment in higher education can provide insights for future economic productivity. The gross enrollment rates in tertiary education in sub-Saharan African countries in the Table were very low in comparison with developed countries. For example, the mean and median gross enrollment rates in 2010 were 6.7 and 4.5 percent, respectively. These compare unfavourably with countries such as the U.K. and the U.S. where the figures were 60 and 95 percent, respectively. In fact, economic development in Japan, South Korea and China owes much to lower fertility rates that in turn facilitated children's education and the creation of skilled labour force. By contrast, less than 50% of children in many sub-Saharan African countries complete primary school education. Thus, it would take at least four decades for sub-Saharan African countries to ensure that 90% of children complete high school education and can be a part of the skilled labour force.

Life expectancy and economic growth

Increases in life expectancy are important for economic development in part because they enable the skilled labour to remain productive over long periods. The early demographic literature described the relationship between *per capita* Gross Domestic Product (PCGDP) *levels* and life expectancy using cross-country data (Preston, 1976). More recently, higher life expectancy in longitudinal analyses was found to predict higher PCGDP *growth rates* for very low-income countries (Bhargava et al., 2001). For example, benefits of higher life expectancy were statistically significant for countries with PCGDP less than 907 in 1987 US dollars; inflation will increase this figure to $1906 for 2014. For countries with higher PCGDP levels than $1906, it would be inappropriate to extrapolate the benefits of higher life expectancy. While it is plausible that more elaborate measures such as "healthy life expectancy" might show beneficial effects for PCGDP growth rates at somewhat higher PCGDP levels, longitudinal data on such indicators are unavailable for most countries.

Further, median life expectancy in sub-Saharan African countries for the years 1980, 1990, 2000, and 2010 were 48.8, 50.1, 50.2 and 54.8, respectively; the sample means were very close. These figures show a six year gain over 30-year period; progress was slowed by premature deaths due to AIDS in 1990-2000 when antiretroviral treatment was unavailable via public clinics. Because tertiary

education requires at least 12 years of schooling and high disease burden prevents individuals from leading productive lives from relatively early ages, economic development entails simultaneous increases in tertiary education and life expectancy. Unfortunately, owing to early parental deaths due to AIDS, orphaned children are often forced to drop out of school (Bhargava and Bigombe, 2003). Thus, it would be prudent to stipulate considerably longer periods than 20 years for elimination of poverty in sub-Saharan Africa.

Population and environmental pressures and economic development

The environmental consequences of population growth and increased economic activity need to be integrated into the formulation of sustainable development policies. While countries such as China and India appear to have enormous potential for economic growth, the effects of air pollution and water contamination need to be taken into account. For example, prevalence rates of Chronic Obstructive Pulmonary Disease in China and India were 8 and 5 percent, respectively (Gao and Prasad, 2013; Bhome, 2012). Moreover, the growing epidemic of obesity and the associated chronic diseases among the affluent in developing countries is reducing medical resources available for the treatment of diseases afflicting the poor (Bhargava, 2015). In addition, climate change is likely to reduce habitats and food production that in turn can promote political instability. While investments in improving population health are necessary for achieving higher economic growth, they are clearly not sufficient. In fact, resource allocation for health and education need to be consistent with the goals of sustainable economic development.

Conclusion

It is critical to adopt a long-term perspective on economic development and accordingly formulate health and education policies for countries. In particular, it will take at least four decades for countries in sub-Saharan Africa to achieve low child mortality rates prevailing in developed countries. Moreover, higher school attainment by children and future supply of skilled labour depends on quality of diets and educational infrastructure that are inadequate in most developing countries. Lastly, while economic productivity depends on population health status, it is important that the pace of economic development is sustainable and does not exert excessive environmental pressures adding to the burden of infectious and chronic diseases.

References

Bhargava, A. (2008,) 'Food, economics, and health', *Oxford: Oxford University Press*.

Bhargava, A. (2015) 'Diet quality, child health, and food policies in developing countries', *World Bank Research Observer*, 30, pp. 247-276.

Bhargava, A., Bigombe, B. (2003) 'Public policies and the orphans of AIDS in Africa', *British Medical Journal*, 326, pp. 1387-89.

Bhargava, A., & Docquier, F. (2008) 'AIDS pandemic, medical brain drain and economic development in sub-Saharan Africa', *World Bank Econ Review*, 22, pp. 345-366.

Bhargava A, Jamison DT, Lau LJ, Murray CJ (2001) 'Modeling the effects of health on economic growth', *Journal of Health Economics*, 20, pp. 423-40.

Bhome, A. B. (2012) 'COPD in India: Iceberg or volcano?', *Journal of Thoracic Disease*, 4, pp. 298-309.

Gao, J., & Prasad, N. (2013) 'Chronic obstructive pulmonary disease in China: Potential role of andacetoral', *Journal of Thoracic Disease*, 5, pp. 549-558.

Gates Foundation (2014) '3 myths that block progress for the poor', *Annual Newsletter*, Gates Foundation: http://annualletter.gatesfoundation.org/#section=home

International Institute for Population Sciences (2007) 'National Family Health Survey-3', *International Institute for Population Sciences*, Mumbai, India.

Jamison, D., Summers, L. Alleyne, G., et al. (2013) 'Global Health 2035: A world converging within a generation', *The Lancet*, 382, pp. 1898-1955.

Preston, S. (1976) 'Mortality patterns in national populations', *New York: Academic Press*.

World Bank (2014) 'World Development Indicators', *World Bank*
http://data.worldbank.org/data-catalog/world-development-indicators

Table: Infant mortality rates, life expectancy and school enrollment in tertiary education in sub-Saharan African countries from the World Development Indicators

Country	Infant mortality/1000 live births		Life expectancy at birth, years		Tertiary school enrollment, percentages	
Year	1980	2010	1980	2010	1980	2010
Angola	169.6	98.2	40.16	50.65	0.62	3.71
Benin	127.5	69.5	45.25	55.59	1.09	
Botswana	58	21.3	60.46	53.11	1.12	
Burkina Faso	117.9	82.4	46.33	54.92	0.21	3.33
Burundi	119.1	87.7	46.86	49.88	0.46	3.25
Cabo Verde	69.2	19.1	59.84	73.77	0.00	17.83
Cameroon	100.4	79.9	51.19	51.06	1.71	11.48
Central African Republic	114.6	108.9	48.81	47.62	1.10	2.57
Chad	122.6	98	47.90	49.19		2.17
Comoros	111.2	60.1	51.96	60.63	0.64	7.92
Congo, Dem. Rep	125.9	111.7	45.82	48.07	1.12	
Congo, Rep	82	64.3	56.24	56.96	4.56	
Côte d'Ivoire	117.1	82.1	51.40	54.74	2.11	
Eritrea	111.7	47.4	43.98	60.99	0.96	2.35
Ethiopia	135	54	43.91	58.72	0.49	7.26
Gabon	81.7	50.4	54.84	62.29	3.00	
Gambia, The	95.1	58.3	47.54	58.16	0.96	
Ghana	95	53	53.11	63.84		
Guinea	163.7	81.2	38.83	53.64	1.22	11.05
Guinea-Bissau	137.6	98.6	40.06	47.70		
Kenya	69.3	50.1	57.74	56.50	0.93	2.75
Lesotho	93.8	67.2	53.66	47.37	0.96	
Liberia	158.3	61.2	43.85	56.15	19.08	19.08
Madagascar	106.2	44.3	48.21	66.47	2.92	3.69
Malawi	151.8	56.1	44.34	53.46	0.46	0.72
Mali	154.1	99.6	39.61	50.95	0.84	5.80
Mauritania	94.2	75.9	52.99	58.22	3.05	4.36
Mauritius	32.3	13	66.99	72.97	1.05	29.63
Mozambique	168.2	75.7	42.81	49.70	0.07	
Namibia	60	31.8	57.80	62.07		
Niger	133.7	68.5	39.53	54.27	0.23	1.46
Nigeria	128.6	80.8	45.49	51.41	1.79	
Rwanda	126.2	41.5	48.20	55.06	0.29	5.49
São Tomé and Principe	62.5	58.3	59.49	64.35		4.48
Senegal	90.4	48	47.33	58.95	2.86	7.92
Seychelles	22.9	11.8		73.03		
Sierra Leone	156.2	120.9	43.04	47.40	1.43	1.68
Somalia		108.3	42.92	50.90		
South Africa	67.2	35.5	56.97	52.08	11.95	11.95
South Sudan	161.4	77.8				
Sudan	86.2	57.5	49.30	61.11	1.58	
Swaziland	83.5	71.4	54.23	48.34	3.47	
Tanzania	104.5	47.8	50.45	57.39	2.11	2.11
Togo	96	73.4	49.62	56.59	1.64	9.46
Uganda	113.7	60.4	50.07	53.61	0.54	
Zambia	97.8	55.9	52.02	48.46	2.09	2.41