Original Research Article

Health Inequity in Bangladesh: An Empirical Note

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Abstract: The main objective of this paper is to examine health inequity in Bangladesh based on the Demographic and Health Surveys. It explores several measures of health inequity in selected health indicators. The results are mixed: inequity has declined in some health indicators such as infant mortality and immunization. However, inequity remains pervasive in births assisted by skilled personnel, antenatal care, and births delivered at health facilities.

Keywords: Health inequity, infant mortality, wealth quintile, concentration index, antenatal care.

INTRODUCTION

Bangladesh has achieved significant progress in many health indicators, such as life expectancy, nutritional status of children, infant mortality, maternal mortality, antenatal care, and immunization. However, health inequity remains persistent across income groups, place of residence, educational attainment, and gender. This paper explores trends in health inequity in Bangladesh during the 1993-2018 period.

DATA AND METHODOLOGY

The data are collected from the Demographic and Health Surveys of Bangladesh for the following years: 1993, 1996, 1999, 2004, 2007, 2011, 2014, and 2017-18. The following health indicators are considered: births attended by skilled personnel, sanitation facilities, births delivered at healthcare facility, antenatal care, coverage of full immunization, infant mortality, stunting, and wasting. Six measures of health inequity are presented: Difference (D), ratio (R). absolute concentration index (ACI), and relative concentration index(RCI), population attributable risk (PAR), and population attributable fraction (PAF) (Public Health Ontario, 2013 and WHO, 2021). These measures of health inequity are computed for two dimensions of inequity: economic status (wealth quintile) and place of residence (rural/urban). The difference (D) is an absolute measure of inequality that reveals the difference between two population subgroups; for example, the difference between the immunization coverage between the richest quintile and the poorest quintile households. The ratio (R) is a relative measure of inequality which shows the ratio of a health indicator for two population subgroups. The absolute concentration index (ACI) is a measure of inequality that takes into account all population subgroups for ordered dimensions such as economic status and education attainment. Positive values suggest a concentration of a "favourable" indicator among an advantaged subgroup, negative values indicate a concentration of an "adverse" indicator among a disadvantaged subgroup. The relative concentration index (RCI) is a relative measure of inequality that is bounded between -100 and 100. Positive values indicate a concentration among advantaged while negative values among disadvantaged subgroups. The PAR is an absolute measure of inequality that takes into account all population subgroups. It shows the potential for improvement in setting average that could be obtained if all subgroups had the same level of the indicator as a reference group. The PAF is a relative measure of inequality that takes into account all population subgroups. It takes positive values for favourable health indicators and negative values for adverse indicators.

RESULTS AND DISCUSSION

Table 1 reports various inequality measures in four health indicators (births attended by skilled personnel, antenatal care, infant mortality, and full immunization coverage) involving the economic status (wealth quintile) as the inequality dimension. Several points can be highlighted. For births attended by skilled personnel and antenatal care, the difference (D), appears to show an upward trend. However, the ratio (R) clearly shows a downward trend. The ACI for these indicators are positive indicating that these are concentrated among the advantaged group. For these two indicators ACI appears to show an upward trend; in contrast the RCI shows a downward trend. For infant mortality, the difference (D) displays a downward trend. For this indicator, both ACI and RCI are negative suggesting that this indicator is concentrated among the disadvantaged group. Finally, for full immunization coverage, the inequality measures are low compared to other health indicators.

Table 1

Year	Births attended by skilled personnel				Antenatal coverage			
	D	R	ACI	RCI	D	R	ACI	RCI
1993	27.1	8	4.2	43.8	46.3	4.5	7.8	29.4
1996	29.2	17.7	4.7	54.6	50	4.2	8.8	29.8
1999	39.7	11.4	6.1	47.6	49.6	3.4	8.6	24.8
2004	42.1	12.3	7.5	47.9	57.1	3.2	11	21.8
2007	49.6	8.3	9.1	43.5	53.6	2.7	10.7	20
2011	52.3	5.5	10.1	32	57	2.9	11.3	20.7
2014	56.5	4.2	10.9	25.8	54.4	2.5	10.4	16.3
	Infant mortality				Full Immunization			
Year	D	R	ACI	RCI	D	R	ACI	RCI
1993	44.8	1.6	-8.7	-8.6	24.5	1.5	4.5	7.6
1996	39.7	1.7	-6	-6.7	20.3	1.4	4.3	7.9
1999	34.9	1.6	-7.7	-9.7	24.6	1.5	4.9	8.2
2004	25	1.4	-5	-7	29.3	1.5	5.2	7.1
2007	30.2	1.8	-6.1	-10.7	8.5	1.1	2.2	2.7
2011	32.5	2.1	-6.2	-12.5	16.8	1.2	3	3.5
2014	23.4	1.8	-4.2	-9.6	22.5	1.3	4.3	5.2
Inequality Dimension: Economic status (Wealth Quintile)								

Table 2 reports various inequality measures in four health indicators (births attended by skilled personnel, antenatal care, infant mortality, and full immunization coverage) with the place of residence (rural/urban) as the inequality dimension. For all the four health indicators, the difference (D) declined during the 1993-2014 period. The ratio (R) declined for births attended by skilled personnel and antenatal care, but remained relatively low and stable. The absolute values of PAR and PAF also declined for the four health indicators suggesting decreases in health inequality involving the place of residence as the inequality dimension.

Table 2

Year	Births attended by skilled personnel				Antenatal coverage			
	D	R	PAF	PAR	D	R	PAF	PAR
1993	28	5.2	265.2	25.2	31.9	2.4	109.1	28.8
1996	30.5	6.2	324.4	27.8	36	2.4	110.8	32.7
1999	25.1	3.9	163	21	30.3	2	72.7	25.2
2004	22.8	3.1	117.8	18.3	29.7	1.7	47.1	23.7
2007	24.3	2.5	91.7	19.1	23.9	1.5	35.1	18.7
2011	28.5	2.1	69.7	22.1	25.5	1.5	36	19.7
2014	24.9	1.7	43.9	18.5	20.3	1.3	23.4	15
	Infant mortality				Full Immunization			
Year	D	R	PAF	PAR	D	R	PAF	PAR
1993	21.7	1.3	-19.5	-19.6	12.7	1.2	19.3	11.4
1996	18.5	1.3	-18.8	-16.8	6	1.1	10.2	5.5
1999	6.2	1.1	-6.5	-5.2	11.2	1.2	15.4	9.3
2004	0.1	1	-0.1	-0.1	9.8	1.1	10.8	7.9
2007	8.4	1.2	-11.7	-6.7	5.9	1.1	5.4	4.5
2011	7.2	1.2	-11.3	-5.6	0.8	1	0.7	0.6
2014	4.5	1.1	-7.6	-3.3	5.1	1.1	4.5	3.8
Inequality Dimension: Place of Residence								

Table 3 displays some health indicators for rural/urban areas and for richest and poorest wealth quintiles for the year, 2017-18 (NIPORT and ICF, 2020). For the favorable indicators such as sanitation facilities, antenatal care, births assisted by medically trained providers, the figures are higher for urban areas. Similarly, for these indicators, the figures are substantially higher for the richest quantile. For adverse indicators such as infant mortality and wasting the figures are, surprisingly, higher for urban areas. For the adverse indicators (infant mortality, stunting, and wasting), the figures are higher for the poorest quantile, compared to the richest quintile.

Table 3

Health Indicators	Urban	Rural	Richest	Poorest
Improved sanitation (%)	75.1	61.5	88.3	32.7
Infant mortality	42	36	32	43
Births delivered at health facility	62.5	44.6	77.9	26.3
antenatal care	89.8	79	97.2	63.6
births assisted by skilled provider	67.8	47.2	83	28
%stunting(<2 Sd)	25.4	32.8	17.1	40.2
%wasting (<2sd)	8.9	8.2	7.2	10

CONCLUSION

It appears that in Bangladesh health inequity in the selected health indicators between urban and rural areas declined during 1993-2014. It is also evident that in some indicators such as infant mortality and immunization, health inequity involving wealth quintiles also declined. However, health inequity in indicators such as births assisted by skilled personnel, antenatal care, births delivered at health facilities, and sanitation facilities, involving wealth quintiles remain pervasive.

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