Socio-Economic Inequalities in Maternal and Child Health Care in Selected South Asian Countries: Imperatives and Lessons for Health Care Related Policies

by

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Major concerns in maternal and child health care policies of developing countries

- Weak Relationship : Economic growth and maternal and child health care (Shakya, 2004; Bhutta,2004; Alam et al. 2010; Siath and Wazir, 2010; Hasan et al. 2014)
- Market Forces: Demand and Supply of Health Care & Inverse Care Law (Asada, 2005)
- Population : Increasing Younger Female Population

What is needed new for policy making in health care?

Careful Assessment of inequalities in maternal and child health care

- Socioeconomic status of health care recipient
- Selection of Inequality measures (Wagstaff et al.1991; Whitehead et al. 2004; Harper et al. 2008)
- Decomposition of maternal and child health care inequalities

Research Gap

- Use of Relative Measures of Inequality (Chandra et al. 1991; Suresh and Saxena 2000; Lauridsen and Pardhan 2011; Hajizadeh, Singh, 2013)
- Country Level Research Findings
- Lacks in Decomposition analysis (except Lauridsen and Pardhan, 2011)

Main contributions of present research work:

- Analyse levels and trends in socioeconomic inequalities in maternal and child health care in India, Pakistan and Bangladesh
- Decompose maternal and child health inequalities in individual and household specific covariates

Data and variables

Demographic and health surveys

- India-Family health survey (1992-93 & 2005-06)
- Pakistan-Demographic and health survey (1990-91 & 2006-07)
- Bangladesh-Demographic and Health Survey (1993-94 & 2007)

Maternal and child health outcomes

- Antenatal Care (Absence of qualified birth attendant)
- Child Heath (Absence of full immunization coverage)

Demographic and socio-economic variables

- Age of non-recipient of maternal health care (less than 20, 20-30, 30-40 and above 40)
- Media exposure (weekly frequency of reading newspaper/listening radio/watching TV)
- Tap water
- Education of husband (no education, primary, secondary and higher)
- Place of residence (rural/urban)
- Birth order of child
- Socioeconomic status (household assets based wealth quintiles)

Methodology

Measures of inequality

Absolute Measures

- Range Difference
- Slope Index of Inequality (weighted least square method is used)

Relative Measures

- Rate ratio
- Concentration curves/concentration index
- Relative Index of Inequality (WLS method is used)

Decomposition of Socio-Economic Health Inequalities

- Logistic Regression

Research Findings

Table 1 Trends and Levels in Percentage of Antenatal Care

Variables	India 1992/93 N=48959	India 2005/06 N=36850	Pakistan 1990/91 N=6349	Pakistan 2006/07 N=5775	Bangladesh 1993/94 N=3578	Bangladesh 2007 N=4926
Antenatal care	51.0	22.9	71.3	35.8	79.8	51.9
Age						
Age <20	48.3	22.2	75.3	33.6	79.1	55.2
Age 20-30	47.6	19.4	67.2	31.0	78.4	54.0
Age 30-40	60.1	29.9	73.6	52.6	83.0	60.1
Age>40	74.9	49.1	83.8	52.6	80.3	71.1
Urban	23.0	9.3	41.3	18.0	51.60	32.6
Rural	59.2	27.9	84.9	43.0	82.91	62.3

Husband education						
No education	68.5	39.3	82.3	51.6	87.4	72.9
Primary	49.5	24.3	74.9	39.2	83.4	63.8
Secondary	38.8	16.3	59.0	26.4	70.5	40.5
Higher	20.4	5.7	34.0	15.1	45.5	21.3
Media				Na		
No	67.0	25.3	85.2		88.2	58.8
Yes	30.9	17.4	52.5		68.2	49.8
SES						
Poorest	52.1	41.5	87.1	60.3	89.6	77.0
Richest	44.3	2.7	37.8	6.6	49.3	20.2
Region						
Highest	Rajastha (76.8)	Bihar (65.7)	KPK (82.5)	Balochistan (55.0)	Rajshani (85.4)	Sylhet (59.8)
Lowest	Kerala (3.4)	Kerala (0.36)	Sindh (49.8)	Sindh (27.6)	Dhaka (73.8)	Khulna (47.1)

Table 2 Trends and Levels in Percentage of full immunization of children (12-23 months)

| Variables	India	India	Pakistan	Pakistan	Bangladesh	Bangladesh
	1992-93	2005-06	1990-91	2006-07	1993-94	2007
	N=11600	N=9526	N=1152	N=1326	N=1113	N=1157
Not Fully immunized	64.5	56.4	65.6	51.9	40.8	18.1
Urban	49.2	42.3	56.0	44.1	29.3	13.6
Rural	69.1	61.3	70.5	54.2	42.0	19.5
Birth order	58.7	49.3	65.8	45.6	38.9	15.9
SES						
Poorest	65.0	75.5	78.3	70.6	51.1	20.1
Richest	41.5	29.1	46.3	34.1	26.0	11.1
Region						
Highest	Goa (74.1)	Jhar (65.7)	Balochistan (81.0)	Sindh (62.2)	Dhaka (49.8)	Sylhet (29.1)
Lowest	Nagaland (90.1)	Tamil (19.1)	Punjab (61.5)	Punjab (43.4)	Khulna (19.9)	Barisal (9.7)

Table 3 Measures of inequality (Antenatal care)

Measures	India 1992/93	India 2005/06	Pakistan 1990/91	Pakistan 2006/07	Bangladesh 1993/94	Bangladesh 2007
Antenatal Care						
Range Difference	8.8	38.8	49.3	53.7	46.3	54.8
Rate Ratio	1.25	16.6	2.3	9.1	2.6	3.8
Concentration Index	-0.25	-0.43	-0.12	-0.25	-0.07	-0.22
LB	-0.23	-0.44	-0.013	-0.27	-0.10	-0.24
UB	-0.19	-0.42	-0.019	-0.23	0.07	-0.21

Table 4 Measures of Inequality (Full Immunization among Children 12-23 months)

Measures / countries	India 1992/93	India 2005/06	Pakistan 1990/91	Pakistan 2006/07	Bangladesh 1993/94	Bangladesh 2007
Range Difference	23.5	46.5	32.0	36.5	25.1	9.0
Rate ratio	1.5	2.5	1.6	2.7	1.9	1.8
Concentration Index	-0.008	-0.19	-0.13	-0.12	-0.17	-0.07
LB	-0.004	-0.21	-0.15	-0.15	-0.23	-0.17
UB	-0.017	-0.18	-0.11	-0.08	-0.11	0.017

Range Differnce for Antenatal Care

	1992-93	2005-06	1990-91	2006-07	1993-94	2006-07
	India	India	Pakistan	Pakistan	Bangladesh	Bangladesh
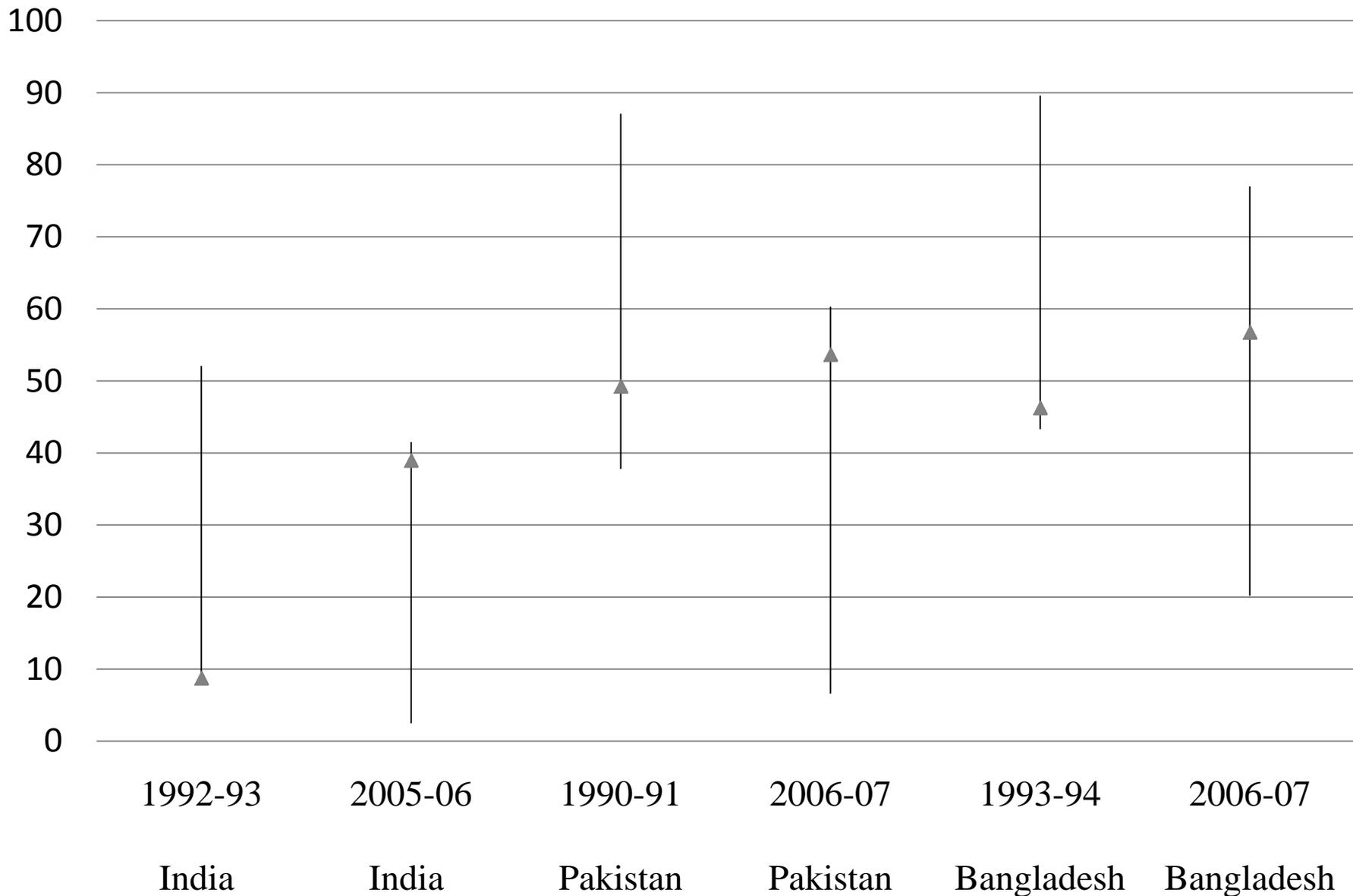
Range Difference for Full Immunization (Abscence)
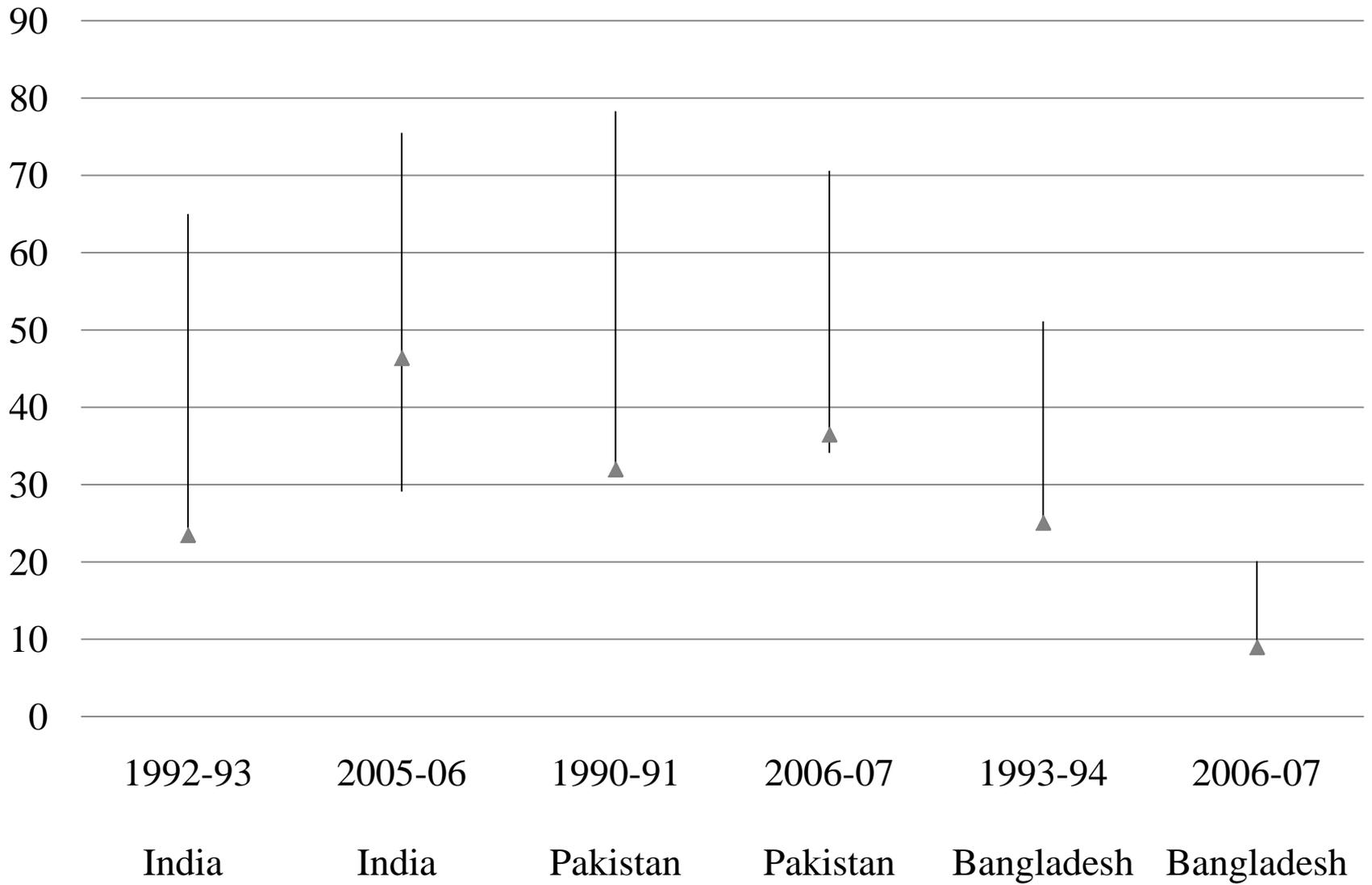
Rate Ratio for Antenatal Care

Scatter plot showing Rate Ratio (y-axis, 0.00 to 18.00) versus an index (x-axis, 0 to 7) with the following data points:
- India 1992-93 (x≈1, Rate Ratio≈1.2)
- India 2005-06 (x≈2, Rate Ratio≈16.6)
- Pakistan 1990-91 (x≈3, Rate Ratio≈2.3)
- Pakistan 2006-07 (x≈4, Rate Ratio≈9.2)
- Bangladesh 1993-94 (x≈5, Rate Ratio≈2.1)
- Bangladesh 2007 (x≈6, Rate Ratio≈3.8)
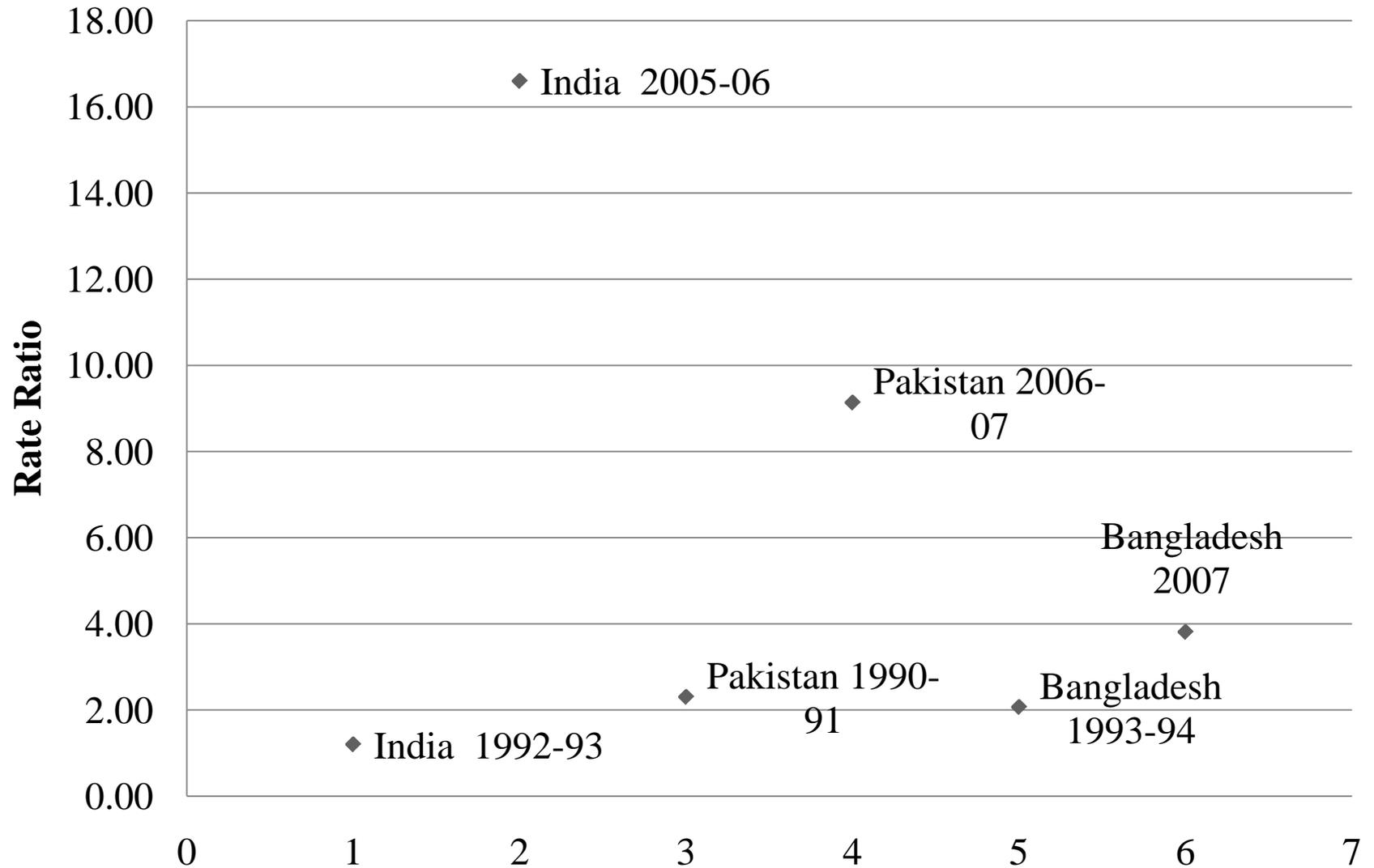
Table 4 Slope Index of inequality and Relative index of inequality (Antenatal care)

Country	SII	Lower	Upper	RII	Lower	Upper
India (2005-06)	-36.5	-69.8	-23.1	-1.4	-2.9	-0.07
Pakistan (2006-07)	-45.3	-77.8	-33.6	-2.7	-3.7	-1.6
Bangladesh (2007)	-56.7	-67.5	-34.5	-2.6	-4.1	-1.3

Table 5 Slope Index of Inequality and Relative Index of Inequality (Full Immunization)

Country	SII	Lower	Upper	RII	Lower	Upper
India (2005-06)	-24.5	-35.6	-12.7	-1.2	-1.9	-0.03
Pakistan (2006-07)	-29.3	-59.8	-24.6	-1.9	-3.6	-1.0
Bangladesh(2007)	-39.8	-51.4	-23.7	-2.9	-2.9	-0.06

Decomposition Analysis – Results

- Demographic variables age and place of residence contribute positively in the absence of antenatal care in each of the selected countries.

- Younger women especially in age group (20-30) in India and Pakistan are more likely to be concentrated in the poorest families.

- In all three countries, poor are largely concentrated in rural areas as compared to reference category (urban). This points out to relatively high contribution of the place of residence to socioeconomic inequality within India, Pakistan and Bangladesh

- The concentration index of education of the husband also contributes significantly in widening socioeconomic inequalities in antenatal care in all selected countries.
- The no-media exposure is largely concentrated in poor households, as indicated by CI, implying proportion of female with no media exposure (Newspaper, TV and Radio) are on the lower socioeconomic scale.

- About 68 percent children among age group 12-23 of not being fully immunized live in rural areas of India, about 51 percent live in rural households of Pakistan, and 49 percent belong to rural families in Bangladesh.

Policy Implications

- Women Welfare Programmes that lower the Slope of Inequality in the distribution of age groups for younger women (less than 20 years) especially in Bangladesh.

- The Benefit Incidence Analysis and Random Control Trials based studies may help to provide needed guidance in determining the success of existing and future health interventions

- Enhancing universal coverage of antenatal care and vaccination of child calls for, Firstly, Identification of the most disadvantageous socioeconomic groups, secondly, Extending provision of social capital in rural areas and thirdly, Consolidating taxation policies to redistribute income from richest to poorest at the ward or district level.

Thank YOU