

**Demographic Ageing, Consumption Poverty and
Later Life Health:
An Exploration of South Asian Nations with
Special Reference to India**

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The underpinnings

The underpinnings behind this study are as below:

- **Demographic landscape of most South Asian countries is changing with a growing decline in fertility, increasing life span and accelerating pace of ageing. Ageing outpaces improvement in income standards and life quality of many South Asians.**
- **Sri Lanka and parts of India – particularly Southern Indian States - are closer (or even surpassed) to the level of global aging.**
- **South Asia is transitioning economically as well with a growing role of market. In the process, many non-market institutions like families have either eroded or weakened without any compensatory mechanism. No move to follow President Obama's health bill.**
- **Economic transition and faster GDP growth in the South Asia region have largely failed to reduce disparities. It also failed to bring major improvements in various public services or provide income security to vulnerable segments of population including the old.**
- **Ageing in this region is therefore turning to become a difficult process and calls for major policy reviews. In countries like India, old age support remains a poverty alleviation strategy.**

With these in mind, this study examines the following:

- **Demographic changes in five major countries – Bangladesh, India, Pakistan, Nepal and Sri Lanka - followed by a few significant characteristics of their ageing processes including faster growth of *older old*, feminization of ageing, growing burden of *older old* on care givers as many of them themselves in higher age brackets, etc. This is followed by a brief discussion of macro-economic and health indicators of countries under reference.**
- **Thereafter, some important socio-economic and health issues of elders are described using the Indian data.**
- **A few critical public policy issues have been identified at the end. We posit that these issues need to be researched further using comparable data sets from the region.**

Major Demographic Parameters of the Selected South Asian Countries

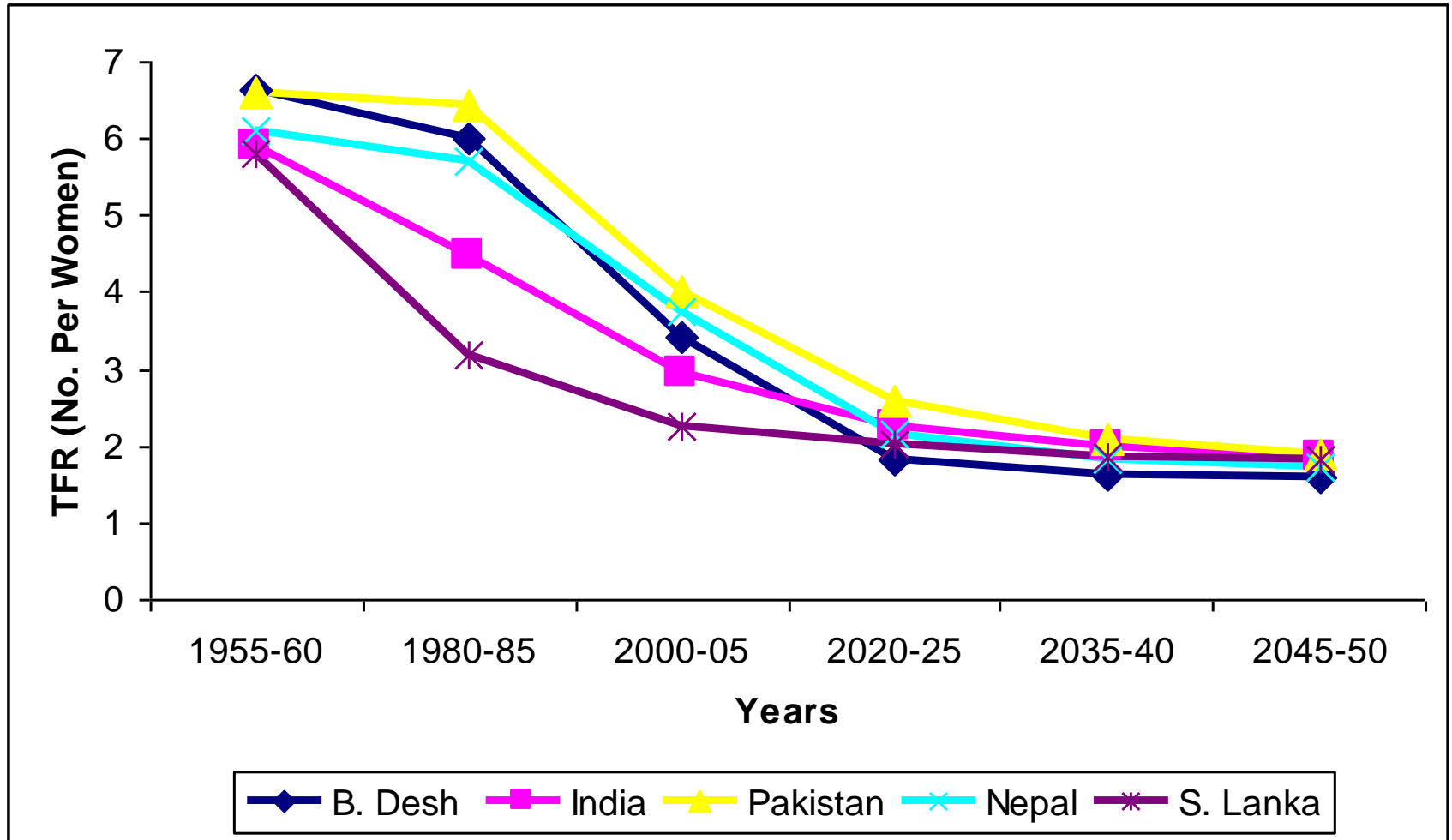
**Source: UN's World Population
Prospects: The 2010 Revision**

TFR – 1955 - 2050 (No. per woman)

Year	B'desh	India	Pakistan	Nepal	S. Lanka
1955-60	6.62	5.90	6.60	6.10	5.80
1980-85	5.99	4.47	6.44	5.72	3.19
2000-05	3.41	2.96	4.00	3.74	2.27
2020-25	1.84	2.26	2.60	2.14	2.04
2035-40	1.61	1.98	2.10	1.82	1.87
2045-50	1.58	1.87	1.90	1.73	1.84

TFR: 1955 – 2050

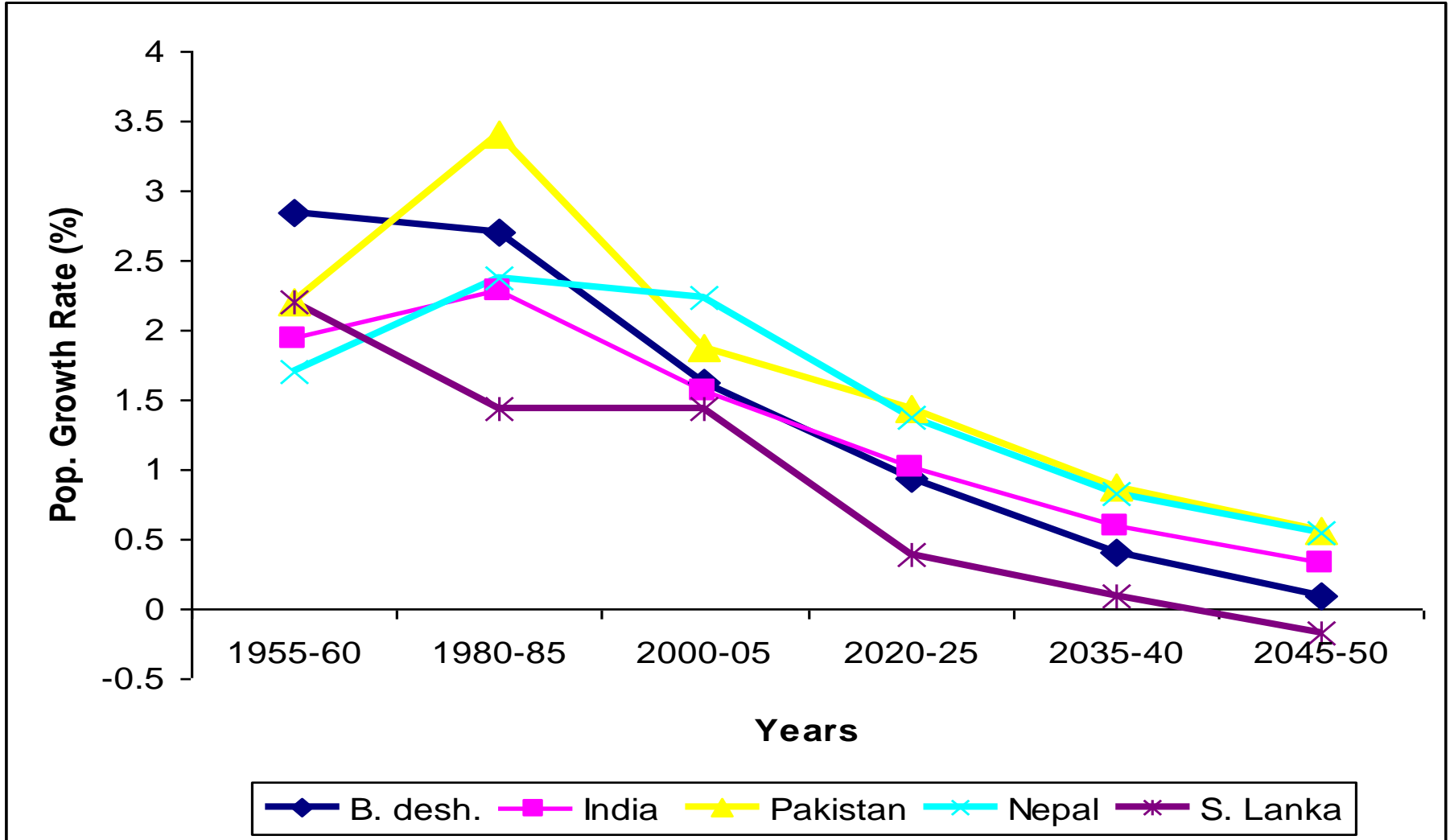
PAKISTAN-NEPAL AT HIGHER LEVEL OF TFR & INDIA-SRI LANKA AT LOWER



Population Growth Rates (%)

Year	B. desh.	India	Pakistan	Nepal	S. Lanka
1955-60	2.85	1.94	2.21	1.71	2.2
1980-85	2.70	2.28	3.41	2.37	1.44
2000-05	1.63	1.57	1.87	2.23	1.44
2020-25	0.93	1.01	1.43	1.37	0.39
2035-40	0.41	0.59	0.87	0.83	0.1
2045-50	0.10	0.33	0.56	0.54	-0.17

Population G/R (%)



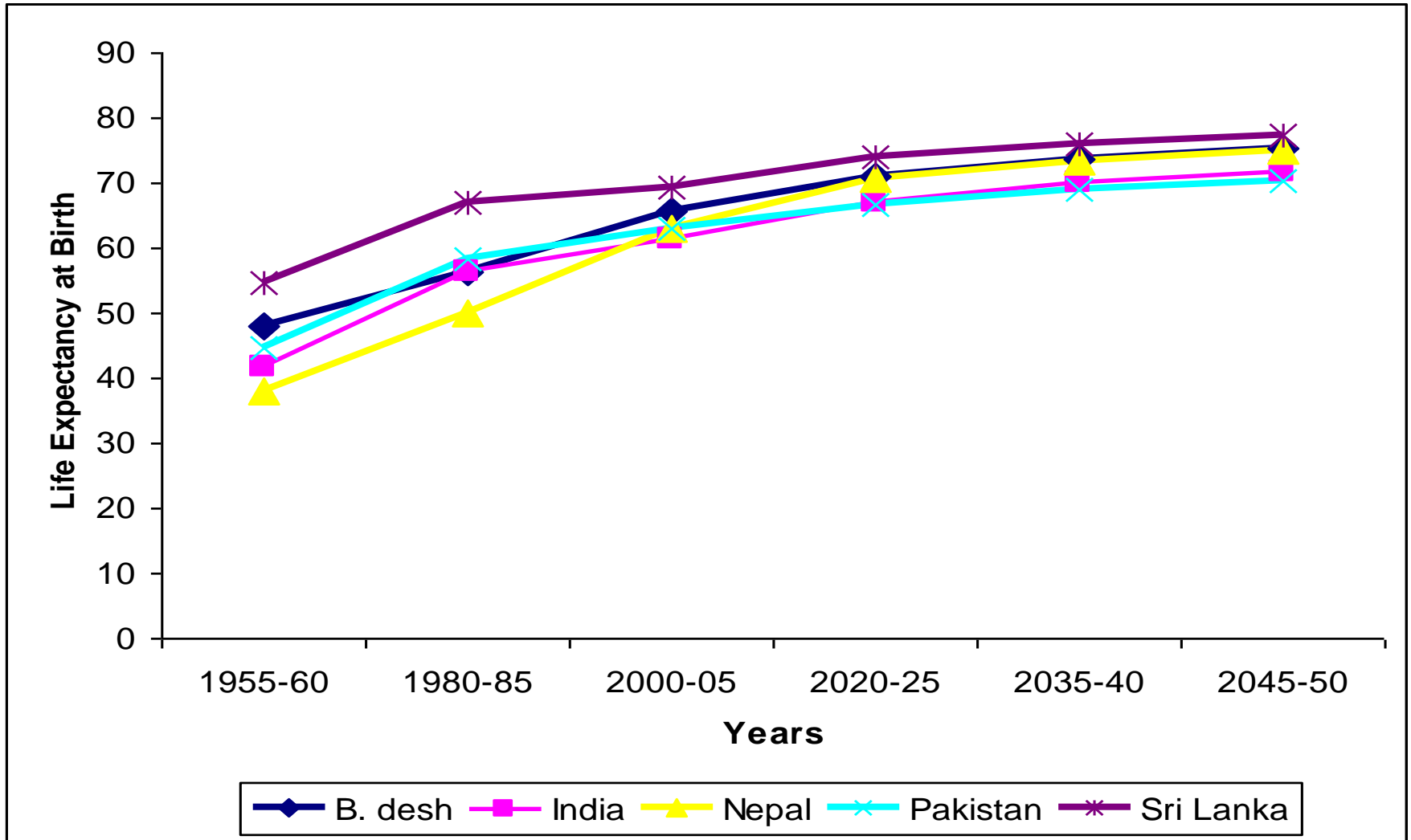
Life Expectancy (e0): Male

close proximity among the countries except Sri Lanka

	1955-60	1980-85	2000-05	2020-25	2035-40	2045-50
B. desh	47.9	56.2	65.7	70.9	73.7	75.2
India	41.8	56.2	61.4	67.0	70.1	71.8
Nepal	38.1	49.9	63.0	70.6	73.5	75.0
Pakistan	44.7	58.2	62.9	66.6	69.0	70.3
Sri Lanka	54.8	66.9	69.5	73.9	76	77.3

Male Life Expectancy (e0)

(Barring SL, e0 of other countries converge after 2000)

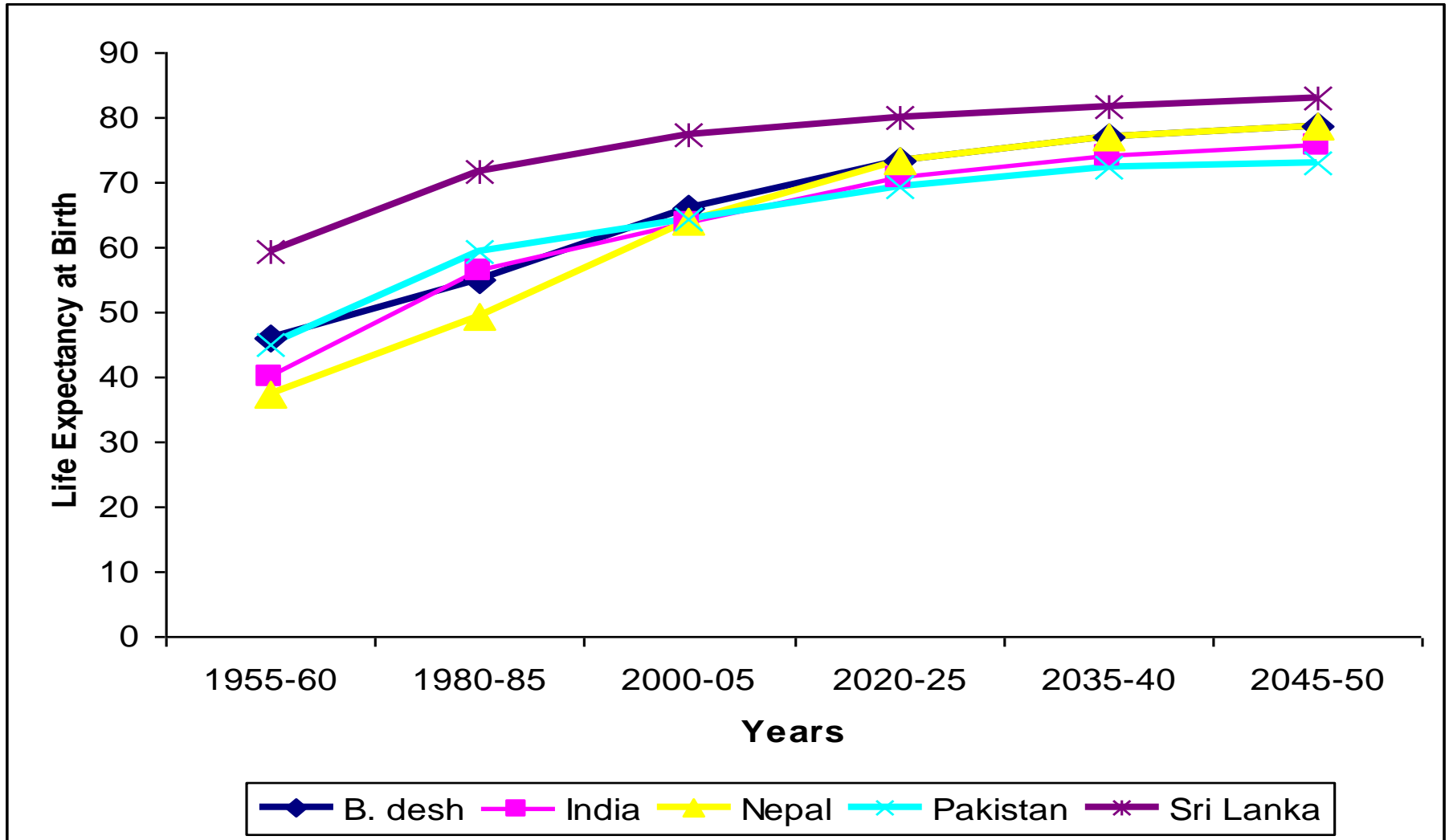


Life Expectancy(e0): Female

Countries	1955-60	1980-85	2000-05	2020-25	2035-40	2045-50
B. desh	45.9	55	66.1	73.5	77	78.7
India	40	56.2	63.7	70.6	74	75.7
Nepal	37.3	49.3	64	73.4	76.9	78.6
Pakistan	45.1	59.2	64.5	69.3	72.2	73
Sri Lanka	59.2	71.8	77.2	79.9	81.8	82.9

Females Life Expectancy (e0)

(Same as the pattern followed by males)



Selected Macroeconomic and Social Indicators: Major South Asian countries

**Source: World Development Indicators
The World Bank (2010)**

Message: Demographic Changes and Societal Ageing in the midst of Acute Poverty, Lack of Decent Employment Opportunities and Inadequate Welfare Enhancing Public Services in the region.

GDP Growth, Population Size & Labour Force

Instances of Dissimilarities

Indicators	B'desh	India	Nepal	Pakistan	S. Lanka
Pop. Size: 2008 (million)	160.0	1140.0	28.8	166.1	20.2
GDP G/R 2000-08	5.8	7.9	3.5	5.4	5.5
Lab. Force: 2008 (million)	76.8	449.9	12.9	55.8	8.3
<u>LFPR: 2008 (15+) (%)</u>					
Male	84	81	76	85	74
Female	58	33	63	21	35
<u>Lab. Force G/R: %</u> 1990-08 (% p.a.) 15 & Over	2.4	1.9	3.0	3.3	1.1

Poverty Situation in S. Asian Countries

Poverty Indicators	B'desh	India	Nepal	Pak.	S. L.
<u>Below National Poverty Line (%)</u>					
Rural	43.8	28.3	34.6	35.9	7.9
Urban	28.4	25.7	21.6	24.2	(24.7)
	(2005)	(2004-05)	(2003-04)	(1998-99)	(2002)
<u>Below International Poverty Line (%)</u>					
Pop. > 1.25 US \$/day	49.6	41.6	55.1	22.6	14.0
Pop. > 2 US \$/day	81.3	75.6	77.6	60.3	39.7
	(2005)	(2004-05)	(2003-04)	(2004-05)	(2002)
Gini Index:	31.0	36.8	47.3	31.2	41.1
	(2005)	(2004-05)	(2003-04)	(2004-05)	(2002)

Vulnerability Assessment

Indicators	B'desh	India	Nepal	Pakistan	S. Lanka
Pension Contribut. (% of Lab. Force):	2.8 (2004)	9.0 (2004)	3.5 (2006)	6.4 (2004)	35.6 (2004)
OOP Health Exp. (%): 2006	97.4	89.9	90.8	82.1	86.7
Public Exp. On Health total % of GDP: 2007	3.4	4.1	5.1	2.7	4.2
P. Exp. on Pension. (% GDP)	0.5 (2001)	2.0 (2007)	0.3 (2003)	0.9 (1993)	2.0 (2002)
Access Imp. Water Source (% Pop): 2006	80.0	89.0	89.0	90.0	82.0
Access to Improved Sanitation Facility (% Pop): 2006	36.0	28.0	27.0	58.0	86.0

Given these realities, the discussion to follow would show that the rapid ageing and its other collateral issues - foremost are health (because very high OOP exp.), poverty (as a one third of total population is below poverty line in most countries except S. Lanka) and poor income security – might emerge as major public policy issues in most of this region.

So far, most national governments in the region have remained evasive.

Lack of detailed information and in-depth studies are among the critical reasons.

Aging Prospects in South Asia

Source: UN's World Population
Prospects: The 2010 Revision

World average is used for comparison

Sri Lanka is close to the world average; India follows

Rapid Ageing in South Asia: In Year 2005

Share of Older Persons in Total Pop.

Age Groups	World	B'desh	India	Nepal	Pak	S. L.
	MALE: 2005					
60+	9.2	6.4	6.6	5.5	6.4	10.1
65+	6.4	4.4	4.2	3.4	4.2	6.7
80+	1.0	0.6	0.5	0.4	0.6	1.2
	FEMALE: 2005					
60+	11.3	6.4	7.5	6.5	6.1	11.4
65+	8.2	4.2	5.0	4.1	4.0	7.7
80+	1.7	0.6	0.6	0.5	0.5	1.4

Year 2025

Share of Older Persons in Total Pop.

Age Groups	World	B'desh	India	Nepal	Pak	S. L.
	MALE: 2025					
60+	13.7	9.4	10.2	7.2	8.0	16.7
65+	9.4	5.7	6.6	4.6	5.2	11.6
80+	1.6	0.9	0.8	0.6	0.8	2.0
	FEMALE: 2025					
60+	16.3	10.2	11.8	9.2	8.4	19.9
65+	11.6	6.3	8.0	6.0	5.5	14.4
80+	2.5	1.0	1.2	0.9	0.8	2.9

Share of Older Persons in Total Pop: In Year 2050

Age Groups	World	B'desh	India	Nepal	Pak	S. L.
	MALE: 2050					
60+	20.2	21.0	17.7	15.3	15.0	24.8
65+	14.6	14.7	12.2	10.1	9.8	19.0
80+	3.5	2.5	2.1	1.4	1.5	4.7
	Female: 2050					
60+	23.5	23.8	20.5	18.5	16.5	29.9
65+	17.8	17.2	14.8	13.0	11.1	24.0
80+	5.2	3.4	3.1	2.5	1.9	7.4

Excess of women over men

Ageing issues in South Asia (2008 UN data shows excess of women in B'desh & Pak)

Age Gr.	World	B'desh	India	Nepal	Pakistan	S. L
	2005: % (Elderly women – Elderly men/Total Elderly Pop) * 100					
60+	9.36	-2.32	3.45	9.01	-5.04	6.81
65+	12.06	-5.14	4.96	9.91	-5.53	7.72
80+	27.21	-8.23	7.14	13.39	-6.12	7.09
	2025: %					
60+	7.82	3.16	4.50	13.73	1.05	11.04
65+	10.05	3.85	6.51	14.56	1.38	12.89
80+	22.48	5.96	15.39	20.07	1.98	19.46
	2050: %					
60+	7.31	6.40	5.70	11.73	4.05	12.33
65+	9.55	8.12	7.92	14.92	5.55	14.51
80+	19.87	15.67	16.72	31.33	11.72	24.95

Dependency Burden: in South Asia

Age Gr.	World	B'desh	India	Nepal	Pakistan	S. L
	2005					
60+/15-59	16.7	10.8	11.6	11.0	11.2	16.7
65+/15-64	11.3	7.0	7.3	6.7	7.1	10.7
80+/50-59	15.0	11.6	7.6	7.2	10.0	13.0
	2025					
60+/15-59	24.5	14.6	17.3	12.8	13.1	30.5
65+/15-64	16.0	8.5	10.8	8.0	8.1	19.8
80+/50-59	18.2	9.2	10.4	9.3	10.1	20.6
	2050					
60+/15-59	37.8	36.3	30.8	26.4	24.8	49.9
65+/15-64	25.7	23.3	19.9	16.7	15.2	35.4
80+/50-59	36.8	20.2	20.2	14.2	13.1	54.0

Two observations follow from preceding socio-economic & demographic data:

Most countries in the region are not mutually far from each other in terms of their macro indicators - both economic and demographic. S. Lanka is an exception, **and**

Being the largest country in the region, India dominates both in terms of 60+ pop and multiplicity of ageing issues. It also suffers from regional divergences in age composition with considerable policy implications.

To make the latter more explicit, we present briefly the results of an exercise: *ageing, disparities and health outcomes* based on unit level data from NSS 60th round.

Ageing, Disparities and Health Outcomes:

A study of Indian Situation

(NSS, 60th Round: Jan. – June, 2004)

Share of aged in Total Pop. & Life Expectancy at ages 60 and 70: All India (Source: respective censuses)

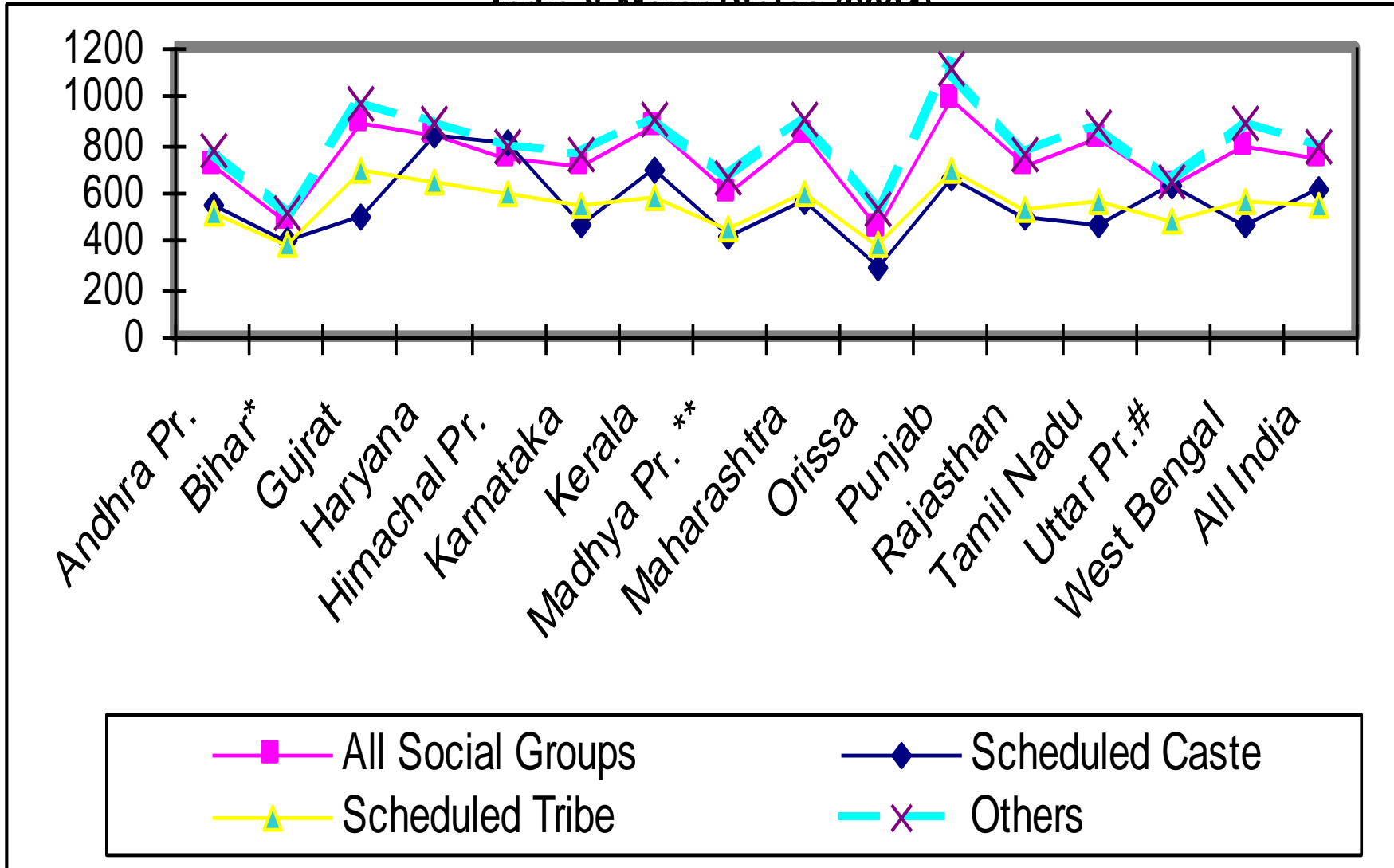
Age Group	Share of Aged (census years): %				
	1961	1971	1981	1991	2001
60+	5.6	6.0	6.5	6.7	7.5
70+	2.0	2.1	2.3	2.5	2.9
80+	0.6	0.6	0.6	0.8	0.9
Life expectancy at age 60 & 70 (in years)					
Years	Men			Women	
	60	70		60	70
1986-90	14.7	9.4		16.1	10.1
1991-95	15.6	10.0		17.1	11.0
1995-99	15.7	10.3		17.7	11.6

PCMCE by Broad Social Groups: All India & States (Nominal, Rs.)

	All Groups	Scheduled Caste	Scheduled Tribe	Others
Andhra Pr.	718.41	553.43	522.11	772.88
Bihar	489.66	402.84	395.71	511.12
Gujrat	888.85	506.62	704.01	967.08
Haryana	847.90	850.00	656.63	890.91
Himachal Pr.	750.39	813.43	605.51	795.55
Karnataka	720.64	475.88	551.58	763.23
Kerala	879.94	697.14	590.45	909.17
Madhya Pr.	599.44	414.88	449.19	666.80
Maharashtra	847.53	568.35	602.58	908.06
Orissa	461.52	295.97	386.84	531.07
Punjab	994.77	666.67	702.96	1125.96
Rajasthan	711.37	503.63	540.18	769.92
Tamil Nadu	820.09	475.39	565.97	878.97
Uttar Pr.#	625.30	637.77	491.20	656.57
West Bengal	798.10	475.88	561.22	885.80₂₇
All India	740.1	614.5	545.1	794.7

Disparities in Consumption Level across Social Groups: Per Capita Monthly Consumption Expenditure:

India's Major States (2004)

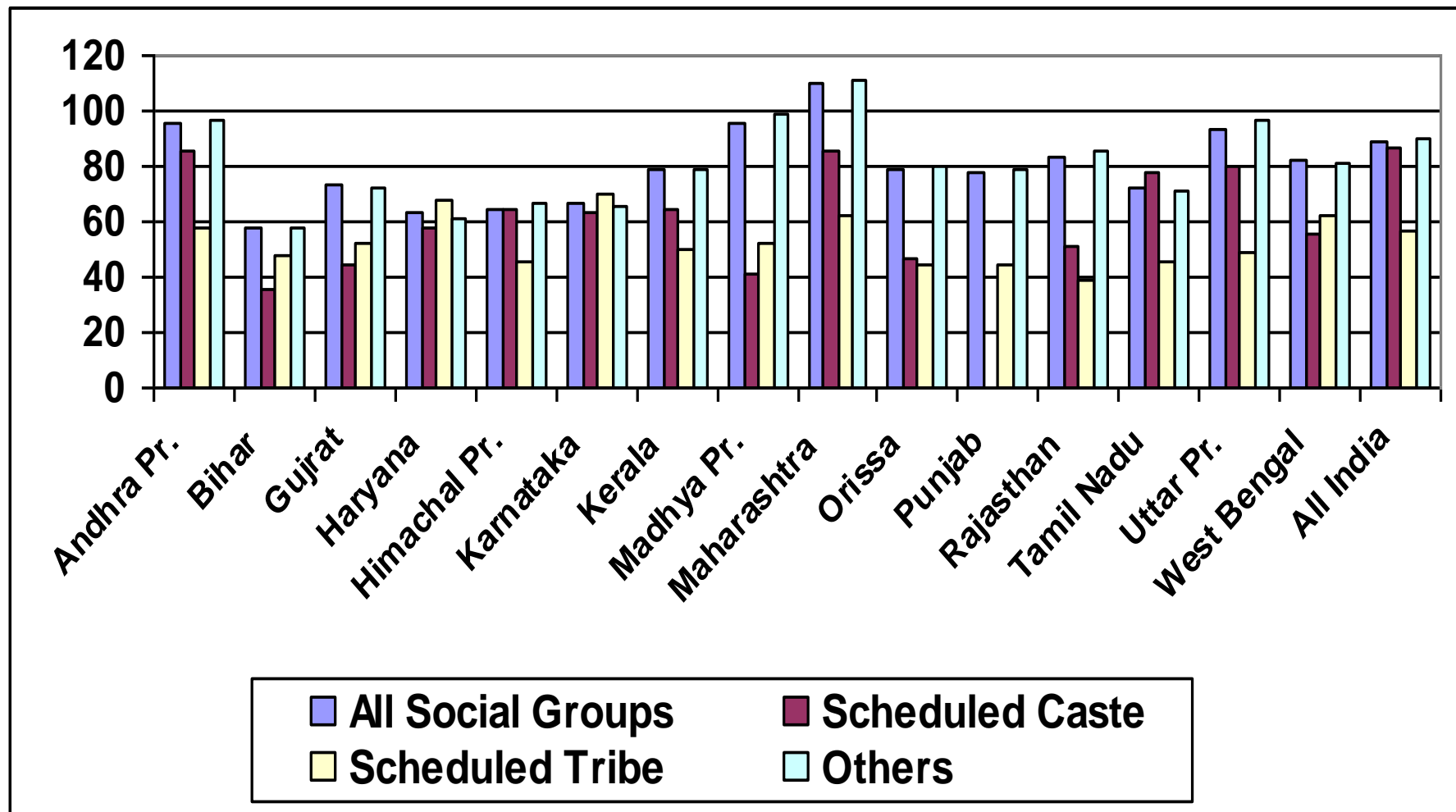


Disparities in Con. Exp: Coefficient of Variation (%): $SD/Mean*100$

India & States	All Groups	Scheduled Castes	Scheduled Tribes	Others
Andhra Pr.	95.8	85.8	57.6	97.0
Bihar	57.6	35.7	48.0	57.8
Gujrat	73.3	44.3	52.0	71.9
Haryana	63.3	58.2	67.6	61.4
Himachal Pr.	64.7	64.6	46.0	66.3
Karnataka	67.2	62.8	69.5	65.2
Kerala	79.4	64.1	49.9	79.3
Madhya Pr.	96.1	41.3	52.2	98.6
Maharashtra	110.1	85.4	62.0	111.1
Orissa	78.7	46.9	44.7	79.7
Punjab	78.3	0.0	44.4	78.5
Rajasthan	83.3	51.5	39.3	85.3
Tamil Nadu	71.8	77.3	45.3	71.1
Uttar Pr.	93.3	80.1	48.5	96.5
West Bengal	82.5	56.1	61.8	81.2
All India	88.8	87.1	56.2	89.5

Consumption Disparities Faced by Old: India & Major States

(Co-efficient of Variation: $SD/Mean * 100$)



**Socio-economic Disparities
and Health Outcomes:
Multinomial Logit Results**

Socio-economic Disparities and Later Life Health Outcomes

- **Two self-reported health conditions studied:**

**1. CURRENT HEALTH: Is YOUR CURRENT HEALTH:
(1) EXCELLENT (2) GOOD (3) POOR**

**2. RELATIVE HEALTH: COMPARED TO LAST YEAR,
ARE YOU FEELING: (1) BETTER (2) ALMOST THE
SAME, (3) WORSE?**

- **MODEL: MULTINOMIAL LOGIT:**

- *Note: Hausman's independence of irrelevant attribute test (IIA) was used to ensure that outcome-J vs. outcome-K is independent of other alternatives.*

Explained & Explanatory Variables

Explained Variables

1. Current Health Status

- a. Excellent
- b. Good (Comparison Gr.)
- c. Poor

2. Relative Health

- a. Very Good
- b. Same (Comparison Gr.)
- c. Worse

- dSoclgr: social group; ST = 1, SC = 2, Others = 3
- dSex = gender dummy, Male = 1; Female = 0
- dAge = dummy of older old, 75+ = 1, below 75 = 0
- dEducation = education level; illiterate = 1; up to primary = 2, up to 10th grade = 3, up to higher secondary & diploma = 4, graduate & above = 5
- dStatecoin = economic independence dummy; Economically independent = 1, dependent (fully or partially) = 0
- dWidowed = widowhood dummy; widow = 1, Others = 0
- dTpdrain = type of drainage: open kutchra = 1, open pucca = 2, covered pucca = 3, under gound = 4, no drainage = 5.
- Log_MPCE = log of households' monthly per capita consumption expenditure

Results of the Multinomial Logit (Result 1): All India

Dependent Variable: **Current Health Status**, $n = 33,133$

Variables	Response Category 1: Excellent Health		
	Coefficient	z	P> z
Cons.	-3.724**	-11.980	0.000
dSoclgr	-0.168**	-4.350	0.000
dSex	0.186**	3.170	0.002
dAge	-0.293**	-3.480	0.000
dEducation	0.104**	3.940	0.000
dStatecoin	0.628**	11.870	0.000
dWidowed	-0.072	-1.180	0.237
dTpdrain	-0.064**	-4.070	0.000
log_MPCE	0.200**	4.180	0.000

Results of the Multinomial Logit ----- Result 1 Contd.

Dep. Variable: **Current health Status**; $n = 33,133$

Variables	Response Category 3: Poor Health		
	Coefficient	z	P> z
Cons.	0.282	1.640	0.101
dSoclgr	0.100**	4.480	0.000
dSex	-0.019	-0.620	0.539
dAge	0.684**	20.730	0.000
dEducation	-0.061**	-3.410	0.001
dStatecoin	-0.773**	-23.600	0.000
dWidowed	0.030	1.000	0.315
dTpdrain	0.041**	4.950	0.000
log_MPCE	-0.243**	-9.090	0.000

Results of Multinomial Logit (Result 2): All India
Dep. Variable: Relative Health Condition; n = 33,133

Variables	Response Category 1: Improvement in Health		
	Coefficient	z	P> z
Cons.	-1.672	-8.080	0.000
dSoclgr	-0.103**	-3.980	0.000
dSex	0.058	1.530	0.125
dAge	-0.100*	-2.060	0.040
dEducation	0.051**	2.680	0.007
dStatecoin	0.111**	3.150	0.002
dWidowed	-0.029	-0.760	0.445
dTpdrain	-0.032**	-3.130	0.002
log_MPCE	0.064*	1.980	0.047

Results of Multinomial Logit ----- Result 2 Contd.

Dependent Variable: **Relative health Condition**; $n = 33,133$

Variables	Response Category. 3: Decline in Health		
	Coefficient	z	P> z
Cons.	-0.543	-3.050	0.002
dSoclgr	0.084**	3.590	0.000
dSex	-0.026**	-0.820	0.413
dAge	0.515**	14.740	0.000
dEducation	-0.035*	-1.950	0.051
dStatecoin	-0.522**	-15.740	0.000
dWidowed	0.019	0.590	0.555
dTpdrain	0.025**	2.820	0.005
log_MPCE	-0.114**	-4.140	0.000

Discussion of the Regression Results

- Both the sets of results clearly indicate that the socio-economic status (particularly the economic independence), age-caste factors, and access to public health services like drainage are among the critical factors in health outcomes in later ages. Further, this is true both for current as well as relative health.
- There are also indications that the socio-economic factors may or may not remain decisive in health gains of individuals, they are significant in risking people to face poor health in later life. Persons with better SES are less likely to suffer from worsening in health status overtime.
- Interestingly, these results also indicate that economic independence nullifies the effects of widowhood on health; implying that income security in older ages is an important prevention against the health risks in later years.

Concluding Observations

- South Asian countries like **Sri Lanka and India** have reached to a level of demographic transition where ageing and its ramifications are imminent. Growing burden of dependency and increasing feminization of ageing in South Asia may be noticed.
- With **downsizing of families, growing role of market and high inflation of consumption good**, ageing appears to be a painful experience for South Asian old. Low PCMCE figures indicate that.
- Health disadvantages to lower caste, economically dependent, illiterate, poor accessibility to public health services (drainage, etc.) are visible from the multivariate logit regression. Old age in itself is the biggest risk factor.
- With growing size of *older olds*, medical and long term care will have to be developed in S. Asia. Financing of these services are indeed an important public policy issue. Tax/cess on health hazardous commodities/services may be considered.

Concluding Observations Contd.

- Another serious policy concern is the lack of income suffered by old. **With high disparities, decelerating growth in quality employment, negative rate of return earned by small savings and marketization, many aged may not be able to survive without public pillared social pension.**
- **As a region with high disease prevalence and functional impairments, South Asia needs large-scale subsidies on support gadgets and institutionally provided assisted living.**
- **Public health measures in South Asia need to be expanded beyond reproductive health to include prevention against old age diseases. Primary health centers may be geared to provide basic health services to old.**
- Pension reform and management of retirement fund **are other critical issues for further research.**

Concluding Observations Contd.

- There is a need to generate information on old age and its collateral issues, especially in a cross-country/cross-regional context on comparable basis.

Thanks for your

kind attention
