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Demographic Changes, Ageing and Consumption Poverty: An Exploration of South Asian Nations with Special Reference to India

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Summary

With a successive decline in fertility and growing life span, rapid growth of ageing population in South Asia is quite inevitable. Based on the UN's population projections, the underlying study seeks to examine this phenomenon for five major South Asian countries including India, Nepal, Pakistan, Bangladesh and Sri Lanka. The over all analysis has been conducted at two levels: it began with a description of over time changes in important demographic parameters of countries under reference, affecting the pace of their current and potential ageing. This is followed by a brief discussion on some of its ramifications, especially at the policy level. The latter part of the analysis, which is entirely based on the Indian data and is expected to yield a few important lessons for the neighboring South Asian nations, was conducted to examine the linkages between socio-economic disparities — a common feature across most of this region — and later life health. Using unit level data for 15 major states from the 60th round of the National Sample Survey, this analysis highlights alarmingly low levels of consumption by an average old in almost every Indian state – implying negligible effect of the recent economic upsurge in the country on most of them. It also reveals major consumption disparities across the households. Subsequent econometric exercises based on multinomial logit supplement general perception about significant linkages between individuals' socio-economic attributes and likely health outcomes in later years. The study also underscores the need for cross-country researches on these issues based on intra-regional comparable data.

Key Words: Ageing in South Asia, Socio-economic Disparities and Health Outcomes, Feminization of Ageing, Burden of older old.

1. Introduction

This analysis attempts to highlight changes in a few important demographic parameters[1] of five major South Asian countries including Bangladesh, India, Nepal, Pakistan and Sri Lanka, bringing a structural shift in their age composition and rapid ageing. Despite being simplistic, this analysis draws its justification at least on two considerations: (i) adding them together, these five countries not only constitute most of the South Asia, they also constitute over a fifth of the total population in the world and around 15 percent of the global old. And, therefore, even a cursory discussion on changes in age composition of these countries is expected to highlight several existing and potential issues of a population of this magnitude and their likely policy options. To be more precise, this analysis may help in lending further support to the overriding concern regarding the quality of human life in a region that combines high GDP growth and wealth creation with perennial issues of poverty, unceasing disparities and lack of social protection for a vast majority of its people; (ii) the study further postulates that the past reductions in fertility-mortality parameters in these countries may cause many significant changes in their demographic outcomes—foremost among them, for example, would be a growing bulge in the size of their working age young and post-60 old. In addition, there may also be changes in their nature of dependencies, intra-family income transfers, need for long-term care and medical provisioning, social security coverage, labour market issues[2] and the like. All perhaps need to undergo serious analytical debate.

These arguments, *inter alia*, rest on the following:

- Despite their enormous differences, growing fertility transition, changes in age composition and accelerating pace of societal ageing are likely to converge into several common features with significant consequences both for the society and the economy of the countries under reference. Sri Lanka, as many studies reveal, is already graying much faster followed by India (Siddhisena, 2005; Alam, 2006). Others like Bangladesh, Pakistan and Nepal may not be too far behind.

- Trade liberalization and pro-market economic reform in the region has yet to create an effective and widely accessible social protection network for vulnerable segments – particularly the old. Besides, an overwhelming concentration of labour in low-paid informal economic activities followed by a decelerating growth in higher productivity employment (Anant, Sundram and Tendulkar, 1999) leaves many in the region to face of serious deprivation, inequalities and poor quality of life (World Bank, 2006).

- Growing evidence underlining a causal relationship between poor socio-economic attributes and health inequities (Epstein, Jimenez-Rubio, Smith and Suhrcke, 2009). This appears to be more logical for the older adults and later life health.

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[1] It doesn't however mean to imply a well articulated comparison of changes in demographics of countries under consideration.

[2] To be more precise, there may be a glut in the labour market of certain skills and vice versa (see Alam and Karim, 2006; Alam and Mishra, 1998).

Against some of these underpinnings, the exercise presented below is broadly an attempt to examine changes in a few important demographic factors in five major South Asian countries coupled with growing prospects for: (i) a rapid societal ageing in south Asia (which appears to be ill prepared to face this reality), (ii) major sex imbalances due to higher feminization of population in higher ages, (iii) increasing burden of *older old* with potentials to generate higher demand for various socio-medical support, and (iv) health outcomes of persistent socio-economic disparities in the region, etc. As argued, an analysis of these issues is expected to showcase the insecurities faced by a big fraction of the region's population, particularly in higher ages. This happens despite some recent economic upsurge. It may also serve as a pointer to raise sight about the need for public institutions to redraw their policies and action plans beyond the traditional boundaries of subsidy based well-being, and promote a framework with an enhanced focus on social quality and its determinants.[3] Analyzing these issues may also be useful in building a case for evolving fiscal measures required to introduce public pillared health and income security measures for the old.

The analysis to follow therefore highlights changes—both observed and projected—in major demographic parameters of the countries under reference and the way these changes are working to accelerate their pace of ageing with several policy implications for which they are apparently not fully prepared. This will be followed by a brief case study of the ageing scenario in India, which is seriously undermined because of major disparities, poor old age health and meager per capita monthly consumption expenditure (PCMCE). These disparities and their health outcomes are examined based on a most recent health survey conducted by the National Sample Survey Organization (NSSO) of the Indian Government during January-June 2004 (NSS, 60th round).

A case study of the Indian elders bears justification on two considerations. One is indeed an easier data access with a large sample size. And second, despite huge intra-regional differences, we presume that India proxies South Asian conditions and its people fairly closely. Furthermore, three-fourths of the region's old live in India.

To ensure some conformity in data, the first half of the analysis largely relies on the UN's Population Prospects (2006 revision). Similarly, other supporting details were also obtained from international sources and remained in most cases the same for all the five countries under reference. The latter half of the study, as was explained , describes the Indian situation based on data provided by the National Sample Survey Organization (NSSO) for a sample of households drawn both from the rural and urban areas of all the states and union territories in the country.

2. Observed and Projected Changes in Region's Demographics

A known fact to analysts, demographic transition invariably progresses through the following three stages[4]: First, high fertility coupled with high infant mortality and low life expectancy at birth (e0). The second stage begins with a declining fertility and

[3] For a more comprehensive discussion on the theory of 'social quality' and its important indicators, see Maesen and Walker (2005), Beck et al. (2001), etc. This theory decries the unequal relationship between *'economic and social policies'* and disparages the idea of the latter relying on the former. It also discards the existing tendencies of treating *'social'* and *'individual'* as two distinct and mutually exclusive entities.

[4] A fourth stage mostly applied to highly industrialized societies is not considered here.

mortality, but fertility declines at a much slower pace and longevity remains low. Third, declining fertility-mortality indices stabilize at lower levels with higher longevity at birth and later stages of life. The last two are essentially a precursor to faster growth in adult population including moderate to higher ageing. Table 1 clearly indicates higher stages of demographic transition in the countries under study, which is ultimately responsible for changes in age composition and large-scale ageing—fraught with complex ramifications both socially and economically. This study argues that barring Sri Lanka, many of these realities are yet to be fully recognized for all their consequences in most of this region.

Besides traces of demographic transition, Table 1 brings out two other notable observations as well. One is relating to Sri Lanka which over takes all other countries in the region for its superior demographic achievements and fertility decline, and the second is India's emergence as a country with potentials to achieve a faster upward momentum towards adulthood and societal ageing. An example may follow from its replacement level of fertility. Table 1 indicates that India is expected to achieve this feat around 2020.

Table 1: Demographics of Major South Asian Countries:
Selected Indicators (1955-60 to 2045-50)

Time Period	Bangladesh	India	Pakistan	Nepal	Sri Lanka
	Total Fertility Rate (number of children per woman)				
1955-60	6.76	5.90	6.60	6.06	5.70
1980-85	5.25	4.50	6.60	5.51	3.16
2000-05	3.22	3.11	3.99	3.68	2.02
2020-25	2.33	2.13	2.77	2.56	1.85
2035-40	2.04	1.85	2.25	2.19	1.85
2045-50	1.90	1.85	2.06	2.01	1.85
	Annual Growth Rate of Population (%)				
1955-60	2.28	1.90	2.35	1.57	2.76
1980-85	2.47	2.26	3.63	2.30	1.39
2000-05	1.89	1.62	1.82	2.08	0.43
2020-25	1.27	0.97	1.54	1.60	0.10
2035-40	0.84	0.54	1.05	1.16	-0.35
2045-50	0.56	0.32	0.77	0.88	- 0.55
	Gender-wise Life Expectancy: e^0 (years)				
1955-60	40.0 (38.7)	41.1 (33.3)	46.7 (44.5)	38.1 (37.3)	62.0 (61.4)
1980-85	50.1 (50.0)	56.8 (56.6)	56.4 (56.0)	49.9 (49.3)	66.6 (71.9)
2000-05	61.3 (62.8)	61.7 (64.2)	63.3 (63.9)	61.0 (61.6)	67.0 (75.0)
2020-25	68.3 (71.3)	68.0 (72.1)	69.7 (70.5)	68.3 (70.8)	70.8 (78.2)
2035-40	71.8 (75.6)	71.5 (76.0)	72.8 (74.8)	71.8 (75.2)	73.0 (79.9)
2045-50	73.6 (77.6)	73.4 (77.9)	74.4 (77.0)	73.6 (77.3)	74.3 (80.9)

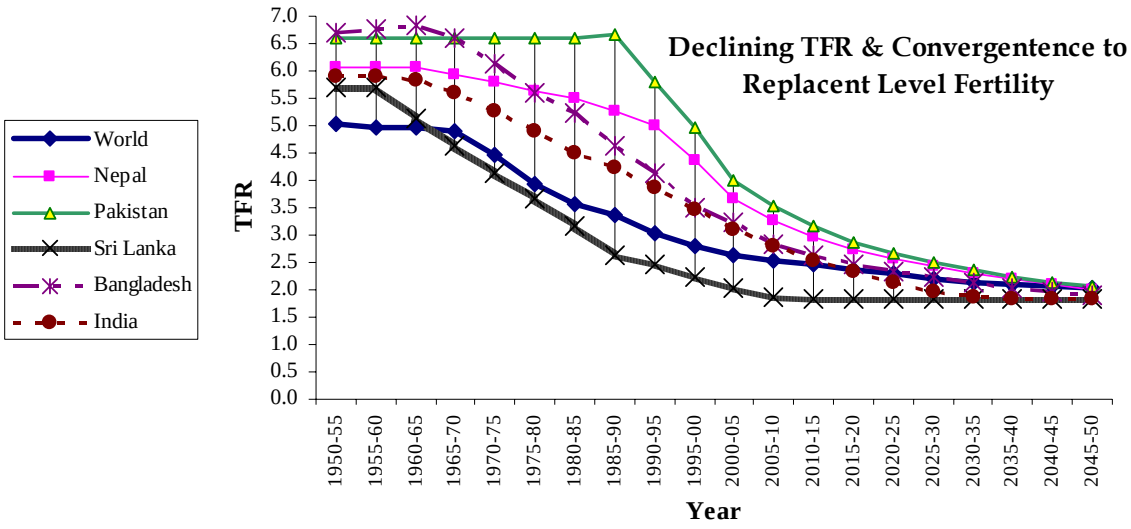
Source: UN's World Population Prospects (2006 Revision). Online data (downloaded 28 Nov. 2007)
Note: Figures in bracket are e^0 for women.

Decelerating growth of population in India is another revealing factor. It may also be noticed that India is the only other country in the region after Sri Lanka where the growth rate of population recedes swiftly. Bangladesh, if judged on the basis of e^0, matches India

closely and even surpasses it marginally in terms of male life expectancy by the fifties. Pakistan and Nepal follow the regional pattern, though with a time lag.

Figure 1 provides an interesting comparison of fertility transition followed by the 5 major countries under consideration and the world. The figure as well compares 'how early' or 'how late' phenomenon in fertility (TFR) transition across the region. A clear lead may easily be noticed in case of Sri Lanka followed by India and Bangladesh. Pakistan appears to be a late starter, though the rate of decline is seemingly sharp and sustaining. Another point to notice from this figure is their convergence to lower levels of fertility by the middle of the century. In other words, despite various non-conformities, these countries are expected to remain close in terms of their age structure. Sri Lanka largely, and India moderately, differs with the rest. Bangladesh catches India quite soon.

Figure 1: Pattern of Fertility Transition & Convergence to Replacement Level Fertility: South Asia and the World



Source: UN's World Population Prospect, (2008 revision), on line data: http://esa.un.org/unpp/index.asp

Assuming what is argued is justifiable, most of the countries in South Asia are likely to experience the following two situations:

- One, unlike the affluent societies of the world, many of them are expected to remain young during most of this century with very large fractions of their populations in working ages—Sri Lanka may indeed be a loser on that count.

- Two, given the pattern of region's demographic transition (Table 1), a growing share of its population is expected to grow older as well. It displays a typical case of bimodal growth with the working age young and the 60+ old growing simultaneously. Between the two, the latter is expected to grow faster. Further, those below fifteen may face a negative growth. All these age composition changes camouflage major economic

implications. We argue that this paradigm warrants a greater reflection in economic planning of the region and its countries. Particularly, ageing and its issues need to bear a much greater attention.

Arguably, while the former - i.e., population in working ages (usually considered as a demographic bonus)—may strain their domestic labour markets due to demand-supply mismatch and seriously curtail bargaining strengths of the job seekers (Alam and Mishra, 1998; Chadha and Sahu, 2006), the latter would require greater socio-medical attention, seek more disability care, and pester for enhanced income security (Alam and Karim, 2006). As the subsequent discussion would reveal, these problems have already started manifesting themselves in India and may prove as a growing economic challenge in coming years for its neighboring countries.

3. Ageing and socio-economic conditions in South Asia: An overview[5]

Despite faster GDP growth and increase in middle income populations, South Asia is still known for its perennial poverty, socio-economic disparities, high magnitude of informal labour market, low wage rate, poor governance, inefficient public services, meager spending on public health care facilities (specially if judged in real terms), no or negligible old age security, lack of social insurance cover, etc. In addition, there are the fast growing changes in their age composition with a simultaneous increase in size of their younger and older cohorts.

While this analysis is not designed to profile the South Asian economies or their issues at any length, Table 2 provides a few of their important socio-economic indicators with some bearings on life quality, ageing and vulnerability. This table, among other things, helps to make three interesting observations. One of them that bear significance in various policy formulations relates to the size and growth pattern of their labour force. Despite enormous intra-regional differences, particularly in terms of size, composition and various socio-economic attributes, Table 2 indicates that the labour force in all the five countries grew almost at a similar pace – i.e., little over 2 percent annually. It *inter alia* tends to underscore the fact that creation of good quality employment and other income generating opportunities commensurate to net annual increase in their labour market remains a major challenge in coming years for most of these countries. This challenge gets aggravated if there are issues like rising old age dependencies and need for filial transfers to support their old. Bulk of the labour market entrants—if engaged in low-paid informal economic activities—may not be able to generate enough transferable income for their old. Fiscal means and public policies to support the aged may therefore be critical. As may be noticed from details, there is no sign of a major awakening in the region to some of these fast approaching challenges.

The other two observations emanating from Table 2 relate to poverty and vulnerability assessment indicators of the region. In most cases, both of these indicators paint a very unsatisfactory picture and indicate high prevalence of poverty, substantial

[5]Unfortunately, much of this discussion fails to account for the recent economic downturn due to global financial crisis. Admittedly, however, because of its growing linkages with the global economy, South Asia may not remain completely insulated against the recessionary pressures and economic slowdown.

income (or consumption) disparities, poor expenditure on health services, very low standards of sanitation, and no or very limited post-retirement income provisioning by

Table 2: Selected Socio-economic Indicators of Major South Asian Countries

Indicators	B'desh	India	Nepal	Pakistan	S. Lanka
A: GDP, Pop. and Labour Force					
Population: 2003 (millions)	138.1	1064.4	24.7	148.4	19.2
GDP Growth: 1990-03 (%)	4.9	5.9	4.6	3.6	4.7
Lab. Force: 2003 (millions)	70.8	473.3	11.7	55.7	8.8
LFPR Total: 2003 (%)	88.6	86.6	86.5	85.6	82.6
Growth of Lab. Force: 1990-03 (%)	2.1	2.1	2.2	2.7	2.0
B: Poverty Situation					
Below Poverty Pop. (%)					
a. Rural	53.0 (2000)	30.2 (1999-00)	43.3 (1995-96)	35.9 (1998-99)	27.0 (1995-96)
b. Urban	36.6 (2000)	24.7 (1999-00)	21.6 (1995-96)	24.2 (1998-99)	15.0 (1995-96)
c. Total	49.8 (2000)	28.6 (1999-00)	42.0 (1995-96)	32.6 (1998-99)	25.0 (1995-96)
Population below $ 1 a day	41.3 (2000)	33.5 (2004-05)	24.1 (2003-04)	17.0 (2002)	5.6 (2002)
Gini Index	33.4 (2000)	36.8 (2004-05)	47.2 (2003-04)	30.6 (2002)	40.2 (2002)
C: Vulnerability Assessment					
Pension Contributors (% of Lab Force)	2.8 (2004)	9.1 (2004)	2.1 (2003)	6.4 (2004)	35.6 (2004)
Private Health Exp. (%)	74.8 (2002)	78.7 (2002)	72.8 (2002)	65.1 (2002)	51.3 (2002)
Public Expenditure on Health (% of GDP)	0.8 (2002)	1.3 (2002)	1.4 (2002)	1.1 (2002)	1.8 (2002)
Public Expenditure on Pension (% of GDP)	0.0	-	-	0.9 (1993)	2.4 (1996)
Access to Improved Water (% of Population)	75.0 (2002)	86.0 (2002)	84.0 (2002)	90.0 (2002)	78.0 (2002)
Access to Improved Sanitation (% of Population)	48.0 (2002)	30.0 (2002)	27.0 (2002)	54.0 (2002)	91.0 ((2002)

Source: World Development Indicators, 2007 (different tables).

the governments (Table 2, Panels B and C). Against this backdrop, we present below a few indices of ageing in these five countries with an underlying assertion that the aged in most of this region are likely to face major deprivations because of inadequate public transfers to their income and health security requirements. Sri Lanka, as has been noted earlier, is to some extent an exception (for details about the government run programmes on aged in Sri Lanka, see United Nations ESCAP, October 2007).

4. 60+ in South Asia: A country-wise profile

Notwithstanding its various disparities and failures in halving poverty (Table 2), most of the South Asian countries—and particularly Sri Lanka and India—are making significant progress to achieve rapid ageing with growing span of life (Table 1). Given this and also in view of latent ageing potentials in countries like India, Bangladesh and

Pakistan, there is perhaps a very a urgent need for governments to design instruments and create fiscal means to meet the health and income security requirements of these people. Such attempts may however be flawed without considerable empirical understanding about their size, composition and several other basic traits in an environment where inter-generational relationships do not remain tradition bound. Not being so exhaustive though, this section attempts to profile the ageing scenario in the region and some of its complex issues like growing dependencies of the *older old* or large-scale feminization of ageing in a policy regime that remains in many countries non-complicit with most of them. Data intensive issues involving ageing, socio-economic disparities and health outcomes will only be examined for India. Ideally, however, there is a need to examine these issues using cross-country data smoothened for definitional glitches.

4.1: Share of the Aged: UN's Country-wise Estimates

Based on the UN's population projections (2006 revision), Table 3 gives a country-wise age-sex distribution of the elderly populations across three broad age categories—namely, 60+, 65+ and 80+. Those in 80s and higher ages represent the *older old*; bulk of them is expected to suffer with poor functional and cognitive health, resulting into considerable pressure on caregivers' time and finances. Interestingly, caregivers to the *older old* themselves are generally in higher ages and do not, therefore,

Table 3: Share of the Older Persons in Total Population: World & South Asia: 2005, 2025 and 2050

Percent

Age Group	World	Bangladesh	India	Nepal	Pakistan	Sri Lanka
	Combined Male & Female: 2005					
60+	10.33	5.73	7.46	5.76	5.90	10.0
65+	7.33	3.53	4.98	3.65	3.90	6.50
80+	1.35	0.39	0.69	0.41	0.51	1.12
	Male: 2005					
60+	9.29	5.42	6.96	5.07	5.62	9.24
65+	6.39	3.29	4.58	3.16	3.70	6.00
80+	0.97	0.34	0.70	0.33	0.51	1.01
	Female: 2005					
60+	11.39	6.05	8.00	6.43	6.19	11.30
65+	8.28	3.78	5.41	4.13	4.11	7.00
80+	1.72	0.45	0.75	0.48	0.52	1.22
Combined Male & Female: 2025						
60+	15.0	9.24	11.49	7.81	8.56	19.71
65+	10.47	5.83	7.73	5.05	5.58	13.75
80+	2.04	0.67	1.24	0.62	0.82	2.07
	Male: 2025					
60+	13.67	8.87	10.69	6.82	8.36	17.96
65+	9.29	5.49	7.06	4.36	5.42	12.21
80+	1.54	0.57	1.05	0.48	0.76	1.62
	Female: 2025					
60+	16.33	9.63	12.33	8.77	8.76	21.35
65+	11.66	6.17	8.44	5.71	5.76	15.18
80+	2.53	0.78	1.44	0.74	0.88	2.50

Combined Male & Female: 2050						
60+	21.80	16.98	20.33	13.96	16.47	29.01
65+	16.20	11.71	14.46	9.37	10.82	21.94
80+	4.4	1.90	3.10	1.43	2.00	6.03
	Male: 2050					
60+	20.00	16.00	18.78	12.58	14.8	25.33
65+	14.5	10.80	13.12	8.15	9.8	18.31
80+	3.4	1.53	2.56	1.02	1.7	4.13
	Female: 2050					
60+	23.60	17.96	21.73	15.29	15.9	32.33
65+	18.00	12.63	15.85	10.55	10.7	25.23
80+	5.40	2.28	3.66	1.82	2.0	7.75

Source: As in Table 1.

find care giving an easy task. Shorn of formal care giving institutions for lack of an affordable financial mechanism, this aspect of ageing is turning out to be a major issue far a large number of families in the region.

How does the ageing in South Asia region and its countries compare with the world over the coming decades may be noted from the distribution presented in Table 3. We notice that Sri Lanka is the most rapidly ageing society in South Asia and with in a span of next two decades the country is projected to surpass the global ageing. India follows closely though Sri Lanka grays much faster. India has nevertheless an edge over others, and the country seemingly to manage a fast growing population of the elderly men and women, many carrying a baggage of their life long poverty and poor health.

Of the remaining, we notice that Pakistan and Bangladesh are turning to grow older much faster. Bangladesh may have an edge.

Yet another notable observation from Table 3 is a growing population of the *older olds* (80+), particularly in Sri Lanka and India. Although, the remaining three countries—Pakistan, Bangladesh and Nepal—do not follow a similar growth pattern, their numbers are bound to accelerate with life prolongations in all the five countries. It many also bring growing demand for medical services, long-term care and income support.

From 2025, Sri Lanka is likely to overtake the global benchmark of 80+ (projected share of 80+ in global population was 2 percent in 2025 while it was 2.2 percent for Sri Lanka; see Table 3). Disturbingly, a big majority of them would be women.

4.2: Feminization of Ageing in South Asia

As the growing feminization of ageing and many of its attendant issues (e.g., greater risks of widowhood, no or inadequate financial empowerment, poor sustenance, dependence in activities of daily living, etc.) are all well documented in the recent literature (Mujahid, 2006; Alam, 2006; Rajan, 2006; Waldorf and Pitfield, 2003, etc.), we simply present in Table 4 a numerical account of excess women over men on the basis of the UN's Population projections (2006 revision). Two very important points emerge from this table. One is the fact that the size of elderly women exceeds men in whole of this

region without an exception. Also, this is going to be true for all the three age brackets. In addition, the margin of excess in Sri Lanka is rising faster than the global benchmark. By 2025, for example, Sri Lanka is projected to overtake the world decisively. India and the remaining three countries would also be following with some gap. Further, this excess is

Table 4: Feminization of ageing in South Asia: excess of women over men

Age Group	Elderly women per 100 men (number)					
	World	Bangladesh	India	Nepal	Pakistan	Sri Lanka
	2005					
60+	120.7	106.4	106.9	128.9	103.9	115.5
65+	127.6	109.4	109.9	133.3	104.9	119.5
80+	174.3	124.7	110.9	150.0	97.3	124.2
	2025					
60+	118.2	105.3	109.4	131.4	99.1	127.0
65+	124.1	109.1	113.3	133.6	100.7	132.8
80+	162.6	131.1	130.8	158.7	110.0	164.8
	2050					
60+	117.8	111.8	112.2	125.7	102.6	140.6
65+	123.9	116.6	117.1	133.8	105.3	151.9
80+	158.8	148.9	138.5	184.6	115.2	206.5

Source: Computed on the basis of the data given in Table (2006 revision), .

growing faster among the *older old* (i.e., 80+). At its worst is the fact that in majority of cases it combines the problem of widowhood. Left unattended, this phenomenon is likely to raise many complex issues, especially among the low caste poor, tribal and socially marginalized (Chen and Dreze, 1995). A solution to this may require engaging all major stakeholders particularly the government and civil society organizations. Inter-generational issues and altruism must receive a place through education and media advocacy.

4.3: Inadequate Social Protection and Rising Burden of Older Old

As noted, South Asia is expected to face a distinct demographic scrnario with bimodal growth of population and will therefore remain young and old simultaneously. A recent paper by Alam and Karim (2006) has tried to discuss this prospect and its possible ramifications—especially for the aged. An interesting observation emanating from this study was that the bimodal population growth is fraught with two serious challenges: one is the pressure on clearance mechanism of the labour market due to bulging in younger cohorts, and the second relates to the needed economic flows—both public and private—to meet various security requirements of the old, especially the *older old*. However, the on going economic regimes in most of the countries seem to have difficulties in meeting these challenges. To illustrate the latter, formal retirement benefits and old age pension are generally weak in coverage and remains confined to organized sector employment.[6] Sri Lanka, like in many other cases, is to some extent an exception (see Table 3). Social protection, on the other, hand is either missing or highly inadequate and suffers both for

[6] For a comprehensive discussion on old age pension and social security provisioning in South Asia, see Rajan (2008). Also see details available on: http://www.ssagov/policy/docs/progdesc/ssptw/2008-2009/asia/

both of the reasons: (i) lack of fiscal resources, and (ii) poor management. This is especially true for Pakistan (Mahmood and Nasir, 2008). Traditional family system and altruistic values are the two escape routes for most governments in the region to evade the elderly care. Interestingly many countries, particularly India, have detailed national old age polices.

Using three different age specifications, Table 5 highlights the growing burden of age dependency in South Asia. The first two specifications are more commonly used in the literature and include two groups of potential caregivers in the15-59 and 15-64 ages. A third form of dependency, measured as a ratio of 80+/50-59, is also considered with an assumption that many of those providing care to the *older olds* are themselves in higher ages and reaching dependency (Mujahid, 2006).

Table 5 clearly indicates that despite unceasing poverty and social backwardness, South Asia is slowly moving closer to many demographically advanced societies with more and more persons joining the rank of (actual or potential) age dependents (see the ratios: 60+/15-59 or 65+/15-64). As fertility decline in the region is gradually picking

Table 5: Dependency Burden: Older Dependents Per 100 Working Age Persons

Percent

	World	Bangladesh	India	Nepal	Pakistan	Sri Lanka
	2005					
60+/15-59	16.8	9.7	12.5	10.4	10.4	15.4
65+/15-64	11.4	5.8	8.0	6.0	6.6	9.4
80+/50-59	15.2	6.1	9.3	6.8	8.6	10.0
	2025					
60+/15-59	24.6	14.6	18.0	12.8	13.9	32.6
65+/15-64	16.0	8.8	11.5	7.9	8.7	20.7
80+/50-59	18.5	7.3	12.7	8.1	10.8	17.2
	2050					
60+/15-59	37.4	27.3	32.9	22.2	26.7	53.4
65+/15-64	25.4	17.4	21.5	13.9	16.1	35.7
80+/50-59	36.8	15.5	23.1	12.0	16.2	46.8

Source: Computed on the basis of the UN's data cited in Table 1 (2006 revision).

momentum (Table 1), a shrinking base of younger caregivers may not be far behind. Sri Lanka and India are once again the two fastest graying societies with highest dependency ratios (see Table 5). Another observation drawn from Table 5 is the fast growing ratios of the *older old* and, as usual, Sri Lanka and India are the two key drivers.

Obviously, these are significant demographic changes in the region and its age composition— requiring a strong institutional build up by the countries to meet the surge in specific requirements placed by the old. At another level, South Asia may as well be an important emerging market for a variety of life style products, assistive gadgets and health care services including insurance products required by a large number of higher-income old. Studies addressed to some of these issues may indeed serve well the market watchers and segments of private businesses.

At the end, it may not be very implausible to argue that South Asia, in particular India and Sri Lanka, is already set to emerge as a region with ageing societies and,

therefore, both the countries require a policy regime to cope with the needs of their rapidly growing old. Obviously, such a policy regime needs to be backed by well designed studies based on larger and authentic data—preferably in a cross-country framework. To substantiate some of these arguments further, and especially to highlight the need for a comprehensive support mechanism for the region's old, we present below a brief analysis of the elderly population in India, comprising more than 79 per cent of the region's old (UN, 2006 revision).

5. Ageing, Disparities and Health Outcomes: A Case Study of India and Likely Lessons for Neighboring South Asia

5.1: Ageing, Disparities and Health Outcomes: India and Major States

Without being as fast as Sri Lanka, it was noted in the preceding discussion that India is fast heading to become a country with a sizeable percentage of the older people. Their absolute number is expected closer to 100 million shortly. Further, the *older old*

Table 6: Ageing in India: Some Facts

Age Groups	Panel A: Elders share in total population (%)				
	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
	Average annual growth of elders (%)				
		1961-71	1971-81	1981-91	1991-01
60+	-	2.82	2.68	2.86	3.05
70+	-	2.03	3.15	3.42	3.28
80+	-	4.1	2.90	4.10	3.0
	Panel B: Life expectancy at age 60 and 70 (number of years)				
	Males		Females		
	60	70	60	70	
1986-90	14.7	9.4	16.1	10.1	
1991-95	15.3	10.0	17.1	11.0	
1995-99	15.7	10.3	17.7	11.6	

Source: Rajan (2006)

in the country (i.e., those above 70 and 80) is also increasing at an accelerating pace. These can easily be noticed from Table 6 (Panel A). Panel B of the same table further shows a considerably large length of expected survival after reaching the age 60 and 70. Women are likely to survive longer—causing more of feminization in older ages with serious issues of widowhood. Alongside, Table 7 shows that graying in India is not an isolated event and the fractions of post-60 old are growing significantly in almost every major state—particularly in Kerala, Tamil Nadu, Himachal Pradesh, Punjab and Maharashtra. Even the demographically low performing states like Orissa and Uttar Pradesh had more than 7 percent of their populations aged 60 or more in 2001. Viewed at the aggregate level, it amounts to be a huge population—a big majority of them with very low economic means, dependent on filial transfers, illiterate and with a baggage of poor health conditions and multiple ailments.

Table 7: State of States in India: Share of Aged in Total Population - 2001

Percent

Major Indian States	Male	Female
Andhra Pr.	7.17	8.05
Bihar*	6.77	6.50
Gujrat	6.18	7.71
Haryana	7.03	8.09
Himachal Pr.	8.79	9.28
Karnataka	7.16	8.25
Kerala	9.60	11.32
Madhya Pr. **	6.67	7.59
Maharashtra	7.81	9.74
Orissa	8.07	8.48
Punjab	8.60	9.53
Rajasthan	6.25	7.35
Tamil Nadu	8.78	9.00
Uttar Pr.#	7.08	6.99
West Bengal	6.73	7.54
All India	7.12	7.85

Source: Census of India, 2001 (http://www.censusindia.net). * Excluding Jharkahand.
** Excluding Chattisgarh. # Excluding Uttranchal

A situation like this makes South Asia, and particularly India, completely distinct from most of the developed countries where affluence and good health preceded ageing by many years. We examine this argument further in remainder of this paper.

Table 8: Per Capita Monthly Consumption Expenditure in India: Major States: 2004

(In Rs.)

Selected Major States	Social Groups							
	All Social Groups		Scheduled Caste		Scheduled Tribe		Others	
	PCMCE	CV	PCMCE	CV	PCMCE	CV	PCMCE	CV
Andhra Pr.	718.41	95.8	553.43	85.8	522.11	57.6	772.88	97.0
Bihar*	489.66	57.6	402.84	35.7	395.71	48.0	511.12	57.8
Gujrat	888.85	73.3	506.62	44.3	704.01	52.0	967.08	71.9
Haryana	847.90	63.3	850.00	58.2	656.63	67.6	890.91	61.4
Himachal Pr.	750.39	64.7	813.43	64.6	605.51	46.0	795.55	66.3
Karnataka	720.64	67.2	475.88	62.8	551.58	69.5	763.23	65.2
Kerala	879.94	79.4	697.14	64.1	590.45	49.9	909.17	79.3
Madhya Pr. **	599.44	96.1	414.88	41.3	449.19	52.2	666.80	98.6
Maharashtra	847.53	110.1	568.35	85.4	602.58	62.0	908.06	111.1
Orissa	461.52	78.7	295.97	46.9	386.84	44.7	531.07	79.7
Punjab	994.77	78.3	666.67	0.0	702.96	44.4	1125.96	78.5
Rajasthan	711.37	83.3	503.63	51.5	540.18	39.3	769.92	85.3
Tamil Nadu	820.09	71.8	475.39	77.3	565.97	45.3	878.97	71.1
Uttar Pr.#	625.30	93.3	637.77	80.1	491.20	48.5	656.57	96.5
West Bengal	798.10	82.5	475.88	56.1	561.22	61.8	885.80	81.2
All India	740.05	88.8	614.51	87.1	545.08	56.2	794.68	89.5

Source: NSS 60th round (January - June 2004), digital data. CV denotes coefficient of variation.

Using unit level data from the recent National Sample Survey (NSS 60th round), Table 8 provides per capita monthly consumption expenditure (PCMCE) of households with co-residing old in 15 major states. These results are further classified by three broad

social categories: namely, (i) Scheduled Caste (SC) - comprising persons from lowest social stratums, (ii) Scheduled Tribe (ST) - largely with traditional agrarian set-up, and (iii) Others - comprising persons other than SC and ST. One of the more significant observations stemming from this table relates to an alarmingly low economic condition of average men and women in almost every observed state. It can as well be noticed from this table that the average consumption spending by a household member is much less than the international poverty norm (i.e. US $ 1 a day). The situation is particularly worrisome in states like Bihar, Orissa, Madhya Pradesh, Uttar Pradesh, etc. The second notable observation from this table relates to higher coefficients of variation (CV), especially for Maharashtra. These coefficients clearly indicate very high disparities in consumption level across the country, making many of the elders susceptible to inflation in consumer goods and gradual withdrawal of the governments in favour of the market.

The levels of per capita consumption expenditure declines further if computed separately for the two socially disadvantageous groups, i.e., SC and ST. We notice that the consumption level of Scheduled Caste households in most of the states is much less than the 'Others'. A similar situation applies to the Scheduled Tribe as well (Table 8). Going by these computations, caste appears to be still an important differentiating factor in India, and causes severe consumption disparities (an important surrogate to judge poverty) across different social stratums.

A question arises from these results, namely do other countries in the region as well suffer from similar disparities and consumption poverty? Alternatively, does caste and ethnicity play a similar role in other countries as well? While a straight yes or no to these questions may not be justifiable in absence of a cross-country analysis based on a comparable data, Table 2 did indicate wide spread poverty, income disparities and lack of instruments to ensure a secured later life for many.

5.2: Ageing, Socio-Economic Disparities and Health Outcomes: An Exploration

A considerable body of evidence is now available to postulate a link between lower socio-economic statuses (SES)—generally characterized by low consumption levels, inadequate educational background, economic dependence, widowhood, lack of access to public health facilities and so on—and poor health outcomes (Smith, 2004, 1999; Marmot, 1999). Does a similar relationship hold for the Indian aged as well? We examined this question based on self-reported current and relative health conditions of the older respondents obtained from the NSS 60th round.[7]

Two separate questions were asked by the NSS organizers to ascertain the self-perceived health conditions of 60+ respondents. The first related to their current health status: Is your current health: (a) very good, (b) good, or (c) poor? And the other was to record relative changes in their health conditions: compared to the last year, how do you

[7] Despite subjectivities in self-reported health data for reasons such as age, income, occupation, illiteracy and poor understanding about illness and health among a good number of respondents, self-assessed health status and information are widely used in the empirical literature to measure health (Smith 1999; Kennedy, Kwachi, Glass, et al, 1998; Ettner, 1996). For arguments against the self-reported health status due to poor perception, see Sen (2002). A study by Crossley and Kennedy (2002) has also reported uncertainties in individuals' self assessment of health.

Box A: Variables in Estimation of Multinomial Regressions

Model & Data	Explained Variables	Explanatory Variables (X_i)
Model: Multinomial Logit Data Source: NSS 60th round (January – June 2004). Household level data (all India sample).	1. Current Health: (a). Excellent (b). Good/Fair* (c). Poor 2. Relative Health: (a) Very good (b) Almost the same* (c) Worse Hausman's test of independence was applied to ensure that outcome-J vs. outcome-k is independent of other alternatives. * Response group	dSoclgr: social group; ST = 1, SC = 2, Others = 3 dSex: gender; Male = 1; Female 0 dAge: old, older old; 75+ = 1, > 75 = 0 dEducation = education level; illiterate = 1; up to primary level education = 2, up to 10th = 3, up to higher secondary & diploma = 4, graduate & above = 5 $\log_e$ MPCE = log of households' per capita monthly consumption expenditure dStatecoind = economic independence dummy; Economically independent = 1, Others (fully or partially dependent) = 0 dWidow: widowhood; widow = 1, Others = 0 dTpdrain: type of drainage; open kutcha = 1, open pucca = 2, covered pucca = 3, under gound = 4, no drainage = 5.

Table 9: Results of the Multinomial Logit: All India
Dependent Variable: Current Health Status (n = 33,133)

Variables	Coefficient	Std.error	z	P>z
	Response Category 1: Excellent Health			
Cons.	-3.724**	0.311	-11.980	0.000
dSoclgr	-0.168**	0.039	-4.350	0.000
dSex	0.186**	0.058	3.170	0.002
dAge	-0.293**	0.084	-3.480	0.000
dEducation	0.104**	0.026	3.940	0.000
dStatecoin	0.628**	0.053	11.870	0.000
dWidowed	-0.072	0.061	-1.180	0.237
dTpdrain	-0.064**	0.016	-4.070	0.000
log_MPCE	0.200**	0.048	4.180	0.000
	Response Category 3: Poor Health			
Cons.	0.282	0.172	1.640	0.101
dSoclgr	0.100**	0.022	4.480	0.000
dSex	-0.019	0.031	-0.620	0.539
dAge	0.684**	0.033	20.730	0.000
dEducation	-0.061**	0.018	-3.410	0.001
dStatecoin	-0.773**	0.033	-23.600	0.000
dWidowed	0.030	0.030	1.000	0.315
dTpdrain	0.041**	0.008	4.950	0.000
log_MPCE	-0.243**	0.027	-9.090	0.000

** Significant at the 1 percent level. * Significant at the 5 percent level.
Note: Response category 2 is comparison group.

feel now: (a) better, (b) almost the same, and (c) worse?[8] Based on these two questions and their responses, we present below the results of two multinomial logit exercises in order to identify a set of socio-economic correlates of later life health. Those reported to hold good or stationary health conditions in the two questions were used as the comparison groups.[9] Both the exercises suggest strong linkages between the socio-economic status of individuals and their post-60 health outcomes. We however first describe the variables used to estimate the model. Box A provides the necessary details including the regressors and the comparison groups.

Corroborating broadly with the available literature, Tables 9 and 10 suggest strong linkages between the SES and the health outcomes at later stages of life. Most of the regressors used in the model are turning out to be the highly consequential and may, therefore, be used as an important benchmark for further exploration and collection of cross-country data. These regressors include caste affiliations, age, sex, education, per capita monthly consumption expenditure, economic independence (i.e., self earner/own source income recipient) and access to public health provisioning, especially drainage. It may be interesting to note that the SES status may even neutralize the gender effect. If, for example, women are educated, economically independent and able to enjoy better socio-economic conditions, they are likely to evade health risks, both current and relative.

Table 10: Results of Multinomial Logit: All India
Dependent Variable: Relative Health Status (n = 33,133)

Variables	Coefficient	Std.error	z	P>z
	Response Category 1: Improvement in Health			
Cons.	-1.672	0.207	-8.080	0.000
dSoclgr	-0.103**	0.026	-3.980	0.000
dSex	0.058	0.038	1.530	0.125
dAge	-0.100*	0.048	-2.060	0.040
dEducation	0.051**	0.019	2.680	0.007
dStatecoin	0.111**	0.035	3.150	0.002
dWidowed	-0.029	0.038	-0.760	0.445
dTpdrain	-0.032**	0.010	-3.130	0.002
log_MPCE	0.064*	0.032	1.980	0.047
	Response Category 3: Decline in Health			
Cons.	-0.543	0.178	-3.050	0.002
dSoclgr	0.084**	0.023	3.590	0.000
dSex	-0.026**	0.032	-0.820	0.413
dAge	0.515**	0.035	14.740	0.000
dEducation	-0.035*	0.018	-1.950	0.051
dStatecoin	-0.522**	0.033	-15.740	0.000
dWidowed	0.019	0.032	0.590	0.555
dTpdrain	0.025**	0.009	2.820	0.005
log_MPCE	-0.114**	0.028	-4.140	0.000

****** Significant at the 1 percent level. ***** Significant at the 5 percent level
Note: Response category 2 is the comparison group.

[8] The actual question was framed to provide five responses: (a) much better, (b) somewhat better, (c) nearly the same, (d) somewhat worse, and (e) worse. We have combined the first two (a and b) and the last two (d and e) to minimize the number of responses or the comparison categories in a multinomial logit framework.
[9] For a detailed methodological discussion on multinomial logit, see Long, 1997.

In sum, from our results, three important factors may have a role in reducing later life health risks: (i) good socio-economic conditions including literacy and own source income, (ii) individual's age, and (iii) public health provisioning. Unfortunately, a large majority of the ageing populations in India and its neighborhood fail to comply with all or most of these conditions. They are therefore at risk to face poor health outcomes.

Interestingly, our results also highlight that the socio-economic conditions may help to mitigate some of the cascading effects of widowhood on health.

6. Concluding Observations and Issues for Further Research

Central to this analysis was an overview of age structure changes and prospective ageing in major South Asian countries along with a few of their ramifications for the economy and the society. Going by these central concerns, this analysis was conducted at two levels. Initially, a review of existing and projected magnitude of ageing in five South Asian countries – Bangladesh, India, Nepal, Pakistan and Sri Lanka – was presented. Some of their implications, especially the need for ageing related policy initiatives, have also been discussed. As India accounts for more than three-fourths of the over 60 populations in South Asia, the next part of the analysis was devoted to explore socio-economic disparities and their likely health implications for the Indian old. Despite a range of intra-regional differences, particularly in terms of population size, social conditions and the economy, it was posited that this case study may help to bring some useful clues to the countries under consideration.

Two interesting observations arising from this rather short and India centric study need to draw attention: (i) demographics of major South Asian countries, particularly those relating to Sri Lanka, India and Bangladesh, have reached to a level where ageing and its various ramifications is imminent. And the (ii) growing burden of old age dependency, accelerating growth of *older old*, and increasing feminization of ageing is clearly discernible with all its socio-economic consequences including fast growing demand for income and health security. Accelerating growth in numbers of *older old* may also imply a large-scale widowhood with various ramifications. With erosion in non-market institutions, growing instances of intergenerational apathy and declining role of governments, ageing appears to be a painful experience in most of the region in general and India in particular. The pro-market west oriented reforms in the region had apparently failed to be largely backed-up by a welfare paradigm commonly at work in most of the western societies and the economies.

The case study of Indian elders also demonstrates serious poverty issues with a very low consumption level of average Indians even though the country remains economically buoyant for the past several years. It also suggests very high consumption disparities across households in most major states in India. Likely health disadvantages to low caste, poor, socially marginalized, economically dependent, illiterate, those lacking access to public services are visible from multivariate logit exercises. Age in itself is turning out to be the biggest risk factor for the old age health. With faster ageing and surging numbers of *older old*, medical and long-term care along with its financing mechanism appears to be a big issue for consideration in most of the region. Promotion of

support gadgets and helping to develop institutions required for assisted living are yet other issues of significance because of the growing *older old*.

To re-emphasize once again, old age pension, social protection and instruments to park funds for post-retirement needs with strong solvency mechanism in a crisis situation warrant serious consideration all across the region. Based on the Chilean system, India has also adopted a defined contribution pension system with individual retirement accounts. Much before India, this model was adopted by a large number of countries in Latin America. Recently, however, there appears to be many serious issues arising with the Chilean system. There are therefore attempts even by the Chilean government along with several others to bring some important modifications to the system (Bertranou, Calvo and Bertranou, 2009). This needs to be borne in mind by the governments in the region engaged in reforming their pension system.

Attempts to generate a well designed intra-regional database on the aged, especially for showcasing both their contributions and security requirements, need serious consideration.

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