



Ageing, Socio-economic Disparities and Health Outcomes: Some Evidence on Quality of Life of Rural Aged in India

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1. Introduction

India is a democratic republic with a long history of colonial rule under the British Empire. Since it gained independence in August 1947 and subsequent promulgation of its Constitution in 1950, India has been a country with Constitutionally backed freedom to its people in almost every major walks of human life ranging from religious belief to freedom of expression, to equality before law, earning of livelihood, seeking education, acquiring property through legal means except in certain special rights areas, and so on. As part of the its welfare content, the Constitution of India prescribed a whole range of ‘Directive Principles’ mandating states to help its subjects through a mix of supportive measures and welfare enhancement policies, especially to those in difficult situations either because of providential reasons like death of bread earners, poor health, ailments, disabilities, old age, destitution or similar other causes, social biases and economic risks. Translating these Constitutional provisions into action, a number of welfare policies, social assistance programmers, subsidies, protective laws, and public services have been designed and implemented at every level of governance – Centre, state and local bodies. To its working population, governments provide several tax and non-tax facilities, labour laws, provident fund provisions, pension to superannuating employees of organized industries and undertakings on pay-as-you-go basis. Though there has been a change in many of these provisions and entitlements since the as the ongoing reforms process gaining momentum since 1991.¹

Intrinsically, however, much of these programmes and public policies in India were designed with goals to serve *a defined segment of individuals or problem*

¹ An illustration may be the recent pension reform that has changed the traditionally followed pay-as-you-go system to an individually contributed pension plan without any defined benefit.



group/s (e.g., scheduled caste, scheduled tribes, other backward castes, religious minorities, elder groups, school children, widows, certain categories of informal sector workers, persons below certain defined poverty level, disabled, and so on), without attempting to create a social system with inherently sustainable welfare contents as suggested by the proponents of the social quality and its broad indicators (Lockwood, 1999; Walker and Maesen, 2004; Maesen and Walker, 2005). Further, these programmes were mostly designed, executed or monitored by keeping the supply side approach at the upper most and by using administrative view points like number schools opened or number of rural dispensaries were set up in a particular year. The outcome measures, which are the cornerstone of the social quality approach (Maesen and Walker, 2005), were generally ignored.

The theory of social quality, as described by Maesen and Walker (2005) in one of their recent contributions, decries the unequal relationship between ‘*economic and social policies*’ and also disparages the idea of latter relying on the former for its scope and content. This theory also discards the growing tendency of treating *social and individual* as two distinct and mutually exclusive entities. Beck et al. (2001), for instance, have made out a strong case that both — *social and individual* — need to be fundamentally “grasped as the constituting entity.” Their study has also provided a robust theoretical framework of this approach by using four basic conditional factors at its root: (i) social empowerment (requiring people to have capability to mutually interact), (ii) social inclusion (i.e., institutional and structural context must be accessible to all individuals), (iii) socio-economic security (every individual must have access to resources that helps interaction) and (iv) social cohesion (necessary for collective values and community building).

India, as may be noticed from the opening paragraph, is one of the leading nations in the world with most of these characterizations, Constitutional provisions and strong democratic values. And yet it faces two major issues. One, the country’s overriding economic concern over the past decades has in many ways failed to bring the anticipated social outcomes, and two, many of its social commitments have either failed to achieve the desired results because of flawed planning, poor execution and improper governance or resulted into inequities because of caste-class biases. It costs the country in many ways, particularly in terms of social cohesion and inclusive development. To illustrate some of these arguments, we present in rest of this paper a detailed analysis of the rural aged, a substantially large segment of population, which is both economically weak and in many cases socially at the losing end.



Following issues are examined:

- One, a distribution of the rural old in 15 major states including their break-up by social groups (e.g., scheduled castes, scheduled tribes and others), gender, broad age categories (i.e., those between 60 to 75 and over)², poverty level, consumption disparities, etc.,
- Two, their health profile including those: (i) reporting poor or declining health status, and (ii) suffering with single or multiple diseases. These details are expected to give an idea about the old age health in rural India. Both are indeed considerably significant from the life quality angle.
- Three, socio-economic status (SES) of old and health outcomes.

The paper is organized as under. Section two presents a distribution of rural aged by states with a view to describe variations in their population size, affiliation by social groups, age-sex distribution, changes in per capita monthly consumption expenditure, etc. These details are essentially to highlight that the aged in India are predominantly rural, distributed unevenly, and a big majority of them remained economically backward with low consumption level. This discussion may also help to infer about their share in globalization goodies. Attempts will also be made in this section to distribute the aged into multiple age groups, identifying states with more of *older old* (i.e., 75+ or 80+) and, hence, with potentials to face greater health risks. Besides, these older old may as well fall much easily below the threshold of physical abilities required to remain functionally independent. As the rural India has no long-term care provisioning except those provided by the families, aged with no family network may face serious difficulties in their activities of daily living (ADL). Section three describes the current and the relative health statuses of the older persons by gender, social affiliations and two broad age groups described earlier. These are in addition to a discussion on those suffering with single or multiple diseases. The socio-economic correlates of old age health, an issue with limited analytical concern, are examined in section 4. A multinomial logit and a count data model (CDM) will be used to derive some tentative inferences. Finally in section 5 we discuss a few policy options. Wherever possible, we try to portray these details over two points time to enable temporal comparisons.

Two sets of data are used. Size distribution of elderly population by gender,

² Higher share of older old may imply greater demand for health care, and need for creation and financing of geriatric care infrastructure.

age and social groups are drawn from the Census data for 2001. As the Indian censuses do not profile aged by disease occurrences or number of diseases, disabilities, consumption expenditure and such other details, the remainder of this analysis relies on NSS data (NSS 52nd and 60th rounds) for 1995-96 and 2004. A point of caution about the NSS 52nd and the 60th rounds: the latter, for instance, was conducted over a period of 12 months (July 1995 – June 1996), while the former was conducted over a 6 months period, i.e., January - June 2004. Both therefore differ in terms of sample size and other important characteristics. This ought not to be ignored while comparing the two sets of results.

2. Rural Aged: Size and Composition by States

2.1: Spatial Distribution of Older Men and Women

As was noted before, the details presented in this section are mostly on the basis of the data available from the Census 2001, (C-Tables, electronic data).

Table 1: Gender-wise Distribution of 60+ in Total and Rural Populations: 2001

All India and Selected Major States	Distribution of Older Persons					
	Share of Aged in Total (Rural+Urban) Population		Aged by Residence: Rural-Urban Distribution of Aged			
	Male	Female	Rural		Urban	
			Male	Female	Male	Female
1. Andhra Pr.	7.17	8.05	78.04	77.66	21.96	22.34
2. Bihar*	6.77	6.50	90.36	90.17	9.64	9.83
3. Gujrat	6.18	7.71	65.84	66.65	34.16	33.35
4. Haryana	7.03	8.09	75.62	74.85	24.38	25.15
5. Himachal Pr.	8.79	9.28	92.83	93.56	7.17	6.44
6. Karnataka	7.16	8.25	70.74	71.49	29.26	28.51
7. Kerala	9.60	11.32	74.81	73.93	25.19	26.07
8. Madhya Pr. **	6.67	7.59	76.49	76.06	23.51	23.94
9. Maharashtra	7.81	9.74	66.82	68.14	33.18	31.86
10. Orissa	8.07	8.48	87.98	88.67	12.02	11.33
11. Punjab	8.60	9.53	72.46	71.80	27.54	28.20
12. Rajasthan	6.25	7.35	79.31	79.45	20.69	20.55
13. Tamil Nadu	8.78	9.00	59.06	57.98	40.94	42.02
14. Uttar Pr.#	7.08	6.99	83.04	82.14	16.96	17.86
15. West Bengal	6.73	7.54	65.20	68.35	34.80	31.65
All India	7.12	7.85	75.09	74.86	24.91	25.14

Source: 2001 Census, Digital data (<http://www.censusindia.net>).

* Excluding Jharkhand. ** Excluding Chattisgarh. # Excluding Uttranchal

Table 1 provides the distribution of 60 and above both at the all India level and by 15 major states.³ This table *inter alia* brings out three interesting points to note. One is the variation in size of elderly population by states. We notice that the share of older persons exceeds all-India level in most of the states under reference; illustration may be Kerala, Himachal Pradesh, Maharashtra, Punjab, Tamil Nadu, etc. Another point to notice from this table is the feminization of ageing as elderly women outnumber men in almost every state except Bihar. The third interesting point is the very high rural base of the ageing population in India, especially in Himachal Pradesh, Bihar, Maharashtra, Orissa, Uttar Pradesh, Rajasthan and so on. This underlies the fact that the rural ageing, which hitherto remains a dormant issue in India, needs to take precedence in policy formulations, especially creation of health care facilities in primary health centers.

2.2: Younger Old Vs. Older Old: Distribution of Rural Aged by Major Age Categories

Who is aged — if judged on biological consideration? There has been a growing debate on this issue in many developing countries including India, especially to decide about a cut-off entitlement age for public transfers and subsidies. While there is no major consensus on this question as different agencies view it differently, the UN follows a cut-off age for most developing at 60. This paper therefore uses the UN norm, though the shares of 65+ and other *older old* categories have also been provided for cross-country comparisons.

Table 2 gives the distribution of rural old in four broad age categories – 60+, 65+, 75+ and 80+ — the last two are considered as the *older old* and a bulging in these age categories is considered fraught with greater stress on care institutions, particularly those responsible for economic, medical and functional care. Panels i to iv of Table 2(a) provide this distribution at the all India level. This is followed by a similar distribution at the state level.

Age distribution of the older persons in Table 2a (panels i – iv) yields couple of interesting revelations. One is the fact that the ageing is markedly pronounced among the higher social groupings comprising the non-SC/ST (shown as Others) populations. Compared with the SC/ST, Table 2-A (panel iv) reveals that the share of aged in ‘Others’

Table 2(a): Distribution of Rural Aged by Age, Sex and Social Groups: All India
2001

³ These states cover more than 90 percent of the country's elderly population.

Percentage

Age Groups	Aged in Total Population			Rural Aged		
	Total (M+F)	Males	Female	Total	Males	Female
Panel: 2-a (i) – All Social Groups						
60+	7.45	7.10	7.83	7.74	7.43	8.06
65+	4.77	4.54	5.02	4.96	4.77	5.15
75+	1.42	1.35	1.49	1.46	1.41	1.51
80+	0.78	0.74	0.83	0.81	0.78	0.84
Panel: 2-a (ii) – Scheduled Castes (SC)						
60+	6.87	6.53	7.23	7.22	6.92	7.54
65+	4.26	4.06	4.47	4.49	4.32	4.67
75+	1.18	1.13	1.23	1.24	1.20	1.28
80+	0.66	0.63	0.69	0.69	0.67	0.71
Panel: 2-a (iii) – Scheduled Tribes (ST)						
60+	6.08	5.71	6.47	6.21	5.85	6.59
65+	3.67	3.42	3.91	3.75	3.51	3.99
75+	0.98	0.92	1.04	1.00	0.95	1.06
80+	0.54	0.52	0.57	0.55	0.53	0.57
Panel: 2-a (iv) – Others (Non-Sc/ST)						
60+	7.74	7.39	8.13	8.11	7.81	8.43
65+	5.01	4.77	5.26	5.25	5.07	5.44
75+	1.52	1.45	1.60	1.59	1.54	1.64
80+	0.95	0.89	1.01	1.04	1.01	1.08

Source: 2001 Census, Digital data (<http://www.censusindia.net>).

category is significantly higher in all the age brackets, amounting that many of the lower caste people do not make to survive as much longer as the people of higher social groups. This underscores the need to do further scrutiny about the ageing processes experienced by the lower casters stratum.

Another interesting point to notice is the gender differentials in ageing. Irrespective of the social groups, Table 2(a) and its panels suggest a considerable longevity gap between women and men. While there is no denying that this phenomenon is more or less universal and particularly occurs in most of the developed world, the point to notice from Table 2(a) is the primacy of women survivors even among the lower social groups (see panels ii and iii). This leads us to a wider question that is currently under investigation in developed countries, namely why men are more



likely than women to suffer an early death? Another related question in the underlying context is: is there a biological determinant for why men die earlier than women? While these questions still await clear-cut answers, there are some who started pleading that men's health in many countries get short shrift as more of them die of just about every one of the leading causes of death at younger ages than women. Whether or not this growing debate is relevant in Indian conditions where ageing and poverty – especially in rural areas – go hand in hand, this phenomenon raises many difficult questions about the income and health security requirements of the widows, especially those in ripe ages of 80 and more.

Table 2(b) reconfirms the all India pattern and indicates a significant and wide spread ageing in rural areas of most major states. Further, the fractions of people in 80 and high age groups have grown to become more visible in many major states like Kerala, Punjab, Himachal Pradesh, Maharashtra, Karnataka, etc. These statistics also reiterate a longevity tilt in favour women with a few exceptions like U.P., Bihar and Tamil Nadu. The other two states where men outnumber women in longevity gains are Orissa and Haryana, though these gains are restricted in both the states to men in 80+ ages (Table 2-b).

Besides the feminization of rural ageing and higher visibility of 80+ age groups, Table 2(b) also brings out the inter-state differentials in graying as the size of elderly population in many states exceed the national average – implying the need for these states to pursue their ageing issues more vigorously. A few of these states like Kerala, Punjab

Table 2(b): State-wise Share of 60+, 65+ and 80+ in Rural Population
India and Major States: 2001

All India & Major States	Percentage					
	60+		65+		80+	
	Male	Female	Male	Female	Male	Female
A. Pr.	7.70	8.57	4.59	5.13	0.64	0.76
Bihar*	6.84	6.51	4.21	4.02	0.73	0.63
Gujarat	6.57	8.08	4.04	5.16	0.65	0.95
Haryana	7.47	8.46	5.39	5.67	0.95	0.92
H. Pr.	9.12	9.50	6.22	6.52	1.37	1.42
Karnataka	7.71	8.87	4.82	5.68	0.84	1.07
Kerala	9.70	11.29	6.60	7.93	1.07	1.44
M. Pr.**	6.95	7.80	4.35	4.95	0.69	0.80
Maharashtra	9.23	11.28	6.60	7.47	0.83	1.04

Orissa	8.40	8.77	5.38	5.56	0.86	0.76
Punjab	9.46	10.23	6.80	7.00	1.40	1.42
Rajasthan	6.47	7.54	4.06	4.92	0.61	0.82
T. Nadu	9.22	9.24	5.78	5.72	0.91	0.88
U. Pr.#	7.41	7.20	4.70	4.52	0.84	0.75
W. Bengal	6.13	7.08	4.01	4.62	0.70	0.81
India	7.43	8.06	4.77	5.15	0.78	0.84

Source: 2001 Census, Digital data (<http://www.censusindia.net>).

* Excluding Jharkhand. ** Excluding Chattisgarh. # Excluding Uttranchal and Maharashtra are particularly at fast graying track and have more than 10 percent of their rural women in 60+ age bracket. States with elders exceeding the national average are many more in number and include the whole of Southern region, and parts of western, northern and eastern regions of the country. States with the ageing populations less than the national average are few in number and largely confined to the Hindi-speaking belt of Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh. West Bengal is the only non-Hindi state with elderly population falling below the national average. Gujarat is another non-Hindi state that falls short of the national if judged only on the basis of the elderly males (Table 2b).

2.3: Rural Aged by Broad Social Groups

To provide context for security requirements of the rural aged, it may be helpful to distribute the older population by three broad social groups – namely the Scheduled Castes (SC), the Scheduled Tribes (ST) and the rest (Others). Three issues are at the center of this distribution. One is an assessment about the ageing differential among different social groups. The remaining two follow from the first and may have important bearing on support provisioning both by the families and the governments. To be more precise, the lower caste ageing (i.e., SC/ST) may mean greater reliance on recourse transfers, particularly the transfers made by the governments, as most of these aged are likely to be more deficient on every measure of socio-economic well-being. The higher caste ageing, on the other hand, may relatively be better and a fraction of them may manage to sustain themselves in later life. As a proxy measure to some of these issues, we tried to distribute the rural aged into the three broad social groups as already mentioned.

Tables 3(a) to 3(c) give the size of older population in India and states by their social group affiliations, lumped into three broad age categories (60+, 65+, 80+) and

Table 3(a): State-wise Share of 60+, 65+ and 80+ in Rural Scheduled Caste (SC)
Population: India and Major States - 2001

Percentage

All India & Major States	60+		65+		80+	
	Male	Female	Male	Female	Male	Female
A. Pr.	7.16	7.67	4.10	4.36	0.49	0.54
Bihar*	6.00	5.68	3.46	3.36	0.54	0.47
Gujarat	6.23	7.95	3.63	4.88	0.54	0.83
Haryana	6.38	7.59	4.55	5.02	0.73	0.74
H. Pr.	8.53	8.34	5.96	5.78	1.26	1.19
Karnataka	7.11	8.07	4.33	5.00	0.78	0.93
Kerala	8.54	10.26	5.60	6.81	0.90	1.13
M. Pr.**	6.94	8.22	4.25	5.16	0.64	0.80
Maharashtra	9.56	11.96	6.83	7.78	0.77	1.00
Orissa	8.48	8.69	5.42	5.44	0.79	0.70
Punjab	7.99	8.57	5.68	5.73	1.09	1.04
Rajasthan	5.84	7.25	3.60	4.59	0.49	0.68
T. Nadu	7.55	7.25	4.42	4.17	0.63	0.58
U. Pr.#	6.90	6.98	4.19	4.23	0.67	0.64
W. Bengal	5.82	6.99	3.78	4.50	0.67	0.80
India	6.92	7.54	4.32	4.67	0.67	0.71

Source: 2001 Census, Digital data (<http://www.censusindia.net>).

* Excluding Jharkhand. ** Excluding Chattisgarh. # Excluding Uttranchal

Table 3(b): State-wise Share of 60+, 65+ and 80+ in Rural Scheduled Tribe (ST)

Population: India and Major States - 2001

All India & Major States	60+		65+		80+	
	Male	Female	Male	Female	Male	Female
A. Pr.	5.64	5.97	3.17	3.39	0.43	0.48
Bihar*	5.33	5.62	3.00	3.24	0.47	0.45
Gujarat	5.52	6.30	3.25	3.77	0.45	0.54
Haryana	-	-	-	-	-	-
H. Pr.	8.72	9.15	5.77	6.11	1.28	1.37
Karnataka	6.53	7.67	3.88	4.73	0.63	0.83
Kerala	7.45	7.64	4.84	5.01	0.84	0.83
M. Pr.**	5.67	6.45	3.30	3.87	0.47	0.55
Maharashtra	6.51	7.96	4.22	4.88	0.44	0.56
Orissa	6.13	7.35	3.53	4.34	0.52	0.52

Punjab	-	-	-	-	-	-
Rajasthan	5.49	6.17	3.30	3.89	0.50	0.61
T. Nadu	6.74	6.41	3.89	3.66	0.61	0.50
U. Pr.#	5.91	5.43	3.66	3.45	0.68	0.58
W. Bengal	5.02	5.92	3.06	3.58	0.53	0.55
India	5.85	6.59	3.51	3.99	0.53	0.57

Source: 2001 Census, Digital data (<http://www.censusindia.net>).

* Excluding Jharkhand. ** Excluding Chattisgarh. # Excluding Uttranchal

Table 3©: State-wise Share of 60+, 65+ and 80+ in Rural Non-SC/ST (Others)

Population

India and Major States - 2001

Percentage

All India & Major States	60+		65+		80+	
	Male	Female	Male	Female	Male	Female
A. Pr.	8.09	9.10	4.88	5.52	0.65	0.85
Bihar*	7.04	6.70	4.37	4.16	0.88	0.76
Gujarat	6.92	8.65	4.32	5.62	0.67	1.07
Haryana	7.80	8.73	3.04	2.75	1.07	1.03
H. Pr.	9.39	9.96	6.44	6.89	0.57	0.40
Karnataka	8.01	9.21	5.04	5.97	0.99	1.25
Kerala	9.89	11.49	6.76	8.12	0.97	1.37
M. Pr.**	7.51	8.32	4.82	5.39	0.79	0.88
Maharashtra	9.68	11.80	6.99	7.89	0.92	1.19
Orissa	9.33	9.41	6.14	6.11	0.92	0.81
Punjab	10.22	11.09	7.35	7.64	1.74	1.63
Rajasthan	6.89	7.98	4.36	5.25	0.63	0.92
T. Nadu	9.85	9.98	6.25	6.26	0.37	0.45
U. Pr.#	7.61	7.30	4.85	4.61	1.00	0.86
W. Bengal	6.38	7.26	4.20	4.78	0.73	0.84
India	7.81	8.43	5.07	5.44	1.01	1.08

Source: 2001 Census, Digital data (<http://www.censusindia.net>).

* Excluding Jharkhand. ** Excluding Chattisgarh. # Excluding Uttranchal

cross- classified by gender. Three interesting observations follow from these tables. One is the higher percentage of aged in 'Others' category. Regardless of age categories or gender, share of the older persons is relatively much higher in 'Others' category than the rest, and in almost every observed state. Second, between the SC and ST, ageing appears to be higher in the former (see Tables 3-a and 3-b). And

finally, the older women outnumber men in all the three social groups, implying that in coming years women would turn out to be significantly large claimants on security provisioning in the country. This may particularly be true for states like Kerala, Punjab, Maharashtra, Tamil Nadu and Himachal Pradesh. Given the lower bargaining strength of women (Agarwal, B. 1990), especially in their later life years, this raises important security issues for consideration by all the stakeholders, especially the families and the government.

With no or negligible age care infrastructure in rural areas, deceleration in quality employment and very high casualization of rural labour market (Alam and Karim, *forthcoming*; NSS 60th round, Report No.506), familial transfers may not suffice in many cases to meet the burden of old age dependencies. This is more likely to happen with

Table 3(d): Dependency Burden on 15-59 Population by Social Groups: 2001
Number of 60+ every 100 Persons in 15-59 Ages: Rural

	Total (All Groups)		Non-SC/ST (Others)		Scheduled Caste		Scheduled Tribe	
	Young+Old	Old	Young+Old	Old	Young+Old	Old	Young+Old	Old
A. Pr.	69.38	13.80	67.01	14.35	73.47	12.87	82.46	10.61
Bihar*	97.42	13.22	96.52	13.51	102.44	11.87	91.87	10.51
Gujarat	72.32	12.60	70.98	13.27	72.51	12.19	76.83	10.46
Haryana	69.34	14.55	81.03	14.90	89.26	13.19
H. Pr.	82.73	15.80	67.68	16.22	73.40	14.67	73.09	15.52
Karnataka	70.76	14.16	67.85	14.44	79.59	13.64	78.45	12.67
Kerala	58.84	16.72	59.64	17.10	52.98	14.42	56.12	11.79
M. Pr.**	90.89	14.08	85.90	14.68	96.68	14.88	99.51	12.12
Maharashtra	79.58	18.41	77.72	19.04	84.02	19.78	86.91	13.52
Orissa	73.93	14.95	70.01	15.93	77.71	15.28	81.12	12.24
Punjab	72.92	17.04	69.09	17.97	81.24	15.04
Rajasthan	94.42	13.65	91.93	14.24	100.24	13.09	98.87	11.70
T. Nadu	59.78	14.81	58.91	15.76	62.23	12.06	64.80	10.90
U. Pr.#	98.21	14.55	96.99	14.70	102.29	14.09	100.94	11.44
W. Bengal	74.70	11.54	74.72	11.90	74.30	11.15	75.97	9.64
India	81.87	14.11	80.34	14.62	86.09	13.47	85.51	11.56

Source: Calculated on the basis of 2001 Census figures, Digital data
(<http://www.censusindia.net>).

socially underprivileged low-income families, especially if they are also to endure the young age dependencies. Table 3(d), which gives number of dependents (0-14 and 60+) per 100 persons in working ages (i.e., 15-59 years) for observed social groups, lends some credence to of these arguments. This table clearly suggests high support burden on working age peoples, and also that the socially backward like the SC and ST are burdened more heavily if judged on the basis of total dependencies. A contrary is however true for 'Others' (Table 3-d).

2.4: Old Age Poverty

At the conceptual level, poverty is often defined as socially perceived deprivation with respect to basic minimum human needs. Economists have often perceived the issue of basic minimum human needs as a normative threshold level of goods and services that should be guaranteed to each individual. It may therefore be inferred that those who fail to achieve this normative threshold level are deprived and, hence, remain poor. But this whole concept may not remain entirely convincing if judged by taking into consideration some important basic differences among individuals. An example may be the age

Table 4 (a): Per Capita Monthly Consumption Expenditure (MPCE) of Rural Households with 60+ Co-residents: Total Households

(Indian Rupees)

All India and States	MPCE: 52 nd Round (July 1995 – June 1996)			MPCE: 60 th Round (Jan. – June 2004)		
	MPCE (Nominal)		CPI (AL) Adjusted MPCE (1986-87=100)	MPCE (Nominal)		CPI (AL) Adjusted MPCE (1986-87=100)
	Rs.	CV		Rs.	CV	
A. Pr.	325.24	56.73	134.98	522.82	53.32	153.39
Bihar	284.19	40.44	117.94	443.02	49.05	129.98
Gujarat	411.43	54.88	170.75	663.26	49.78	194.60
Haryana	458.70	51.01	190.37	715.24	50.15	209.85
Himachal Pr.	429.55	51.31	178.27	697.88	52.73	204.75
Karnataka	331.74	53.31	137.68	777.54	84.37	228.13
Kerala	459.07	69.14	190.52	507.63	47.13	148.94
Madhya Pr.	316.88	46.84	131.51	525.15	45.34	154.08
Maharashtra	344.67	49.86	143.04	440.07	92.20	129.11
Orissa	281.56	47.00	116.85	370.40	52.54	108.67
Punjab	549.47	49.16	228.04	891.17	66.48	261.46

Rajasthan	378.32	37.01	157.01	572.44	67.38	167.95
Tamil Nadu	344.79	48.30	143.09	587.42	59.92	172.35
Uttar Pr.	329.54	53.54	136.76	535.14	94.89	157.01
West Bengal	337.02	46.29	139.87	523.07	55.02	153.47
India	358.88	55.04	148.94	560.11	73.98	164.33

Source: NSS 52nd (July 1995-June 1996) and 60th rounds,(Jan.-June 2004) digital household level data CD.

Notes: CPI (AL) refers to consumer price index for agricultural workers and obtained from Economic Survey, 2003-04 and 2004-05. Bihar, Madhya Pradesh (M. Pr.) and Uttar Pradesh (U. Pr.) are comparable over two respective periods and inclusive of Jharkhand, Chattisgarh and Uttranchal, respectively

differentials that would change the basic minimum requirements of people – the basic needs of young, for example, may largely differ from those of the aged. This poses a big question: can old age poverty really be judged on the basis of the generalized calorific norms. Unfortunately, the ongoing poverty debate in India is far from these considerations and solely relies on a predetermined level of basic minimum food requirements, applied universally. Any estimation of age-specific poverty level is therefore ruled out. And, as a compromise, we computed the per capita monthly consumption expenditure (PCMCE) of households with elderly co-residents for 1995-96 and 2004.⁴ Being a commonly used measure of poverty, the PCMCE is likely to give us an idea about the economic environment faced by the rural aged across most major states. These computations are also made for different social groups to derive differentials in their consumption level, both spatially and over two points of time. Further, to make overtime comparisons possible, we have adjusted the PCMCE by using the consumer price index for agricultural labour (CPI-AL) with 1986-87 as the base (Economic Survey, 2003-04 and 2004-05, Table 5.3).

Table 4 (a) presents the per capita real and nominal consumption expenditures of rural households over two NSS rounds — i.e., July 1995 – June 1996, and January – June 2006.⁵ Besides exhibiting considerable disparities in consumption

⁴ Household consumer expenditure is measured by the NSSO as the expenditure incurred by a household on domestic account over a reference period of a month. It also included the imputed values of home produced goods and services for consumption purposes. The imputed rent is excluded from the owner occupied houses from the consumer expenditure.

⁵ As noted, price adjustment to derive the real PCMCE was made using Consumer Price Index for Agricultural Labour with July 1986 - June 1987 as the base year. The adjustments obtained for the 52nd



level, this table also bears three other significant observations. One, if consumption may be treated as a close proxy for income, the one-dollar poverty norm, accepted internationally, appears to be still a distant dream for many of the rural households. This is clearly highlighted by all the 15 states under consideration, but more strikingly by Orissa, Uttar Pradesh, Maharashtra, West Bengal, Bihar, etc. In most of these states, the daily consumption expenditure of a large number of individuals is below half-a-dollar mark (see PCMCE for these states in 2004, Table 4-d).

The second observation, as noted, relates to variations in nominal per capita consumption expenditure within the states. It may be noticed that the coefficients of variation in most cases are considerably large, implying very high variation in consumption levels of households in states under reference. It also implies that the older persons are living in diverse economic situations, and the low consumption households may not be able to meet even many of their basic requirements. Yet another observation in this context may be the rise in consumption disparities between 1995-96 and 2004. The coefficients of variation have grown much larger overtime — particularly in Maharashtra, Karnataka, Punjab, Rajasthan, Uttar Pradesh, West Bengal, etc. A similar trend may be noticed at the all-India level as well. It only strengthens the general contention that the current economic regime is leading India to face growing inequalities in consumption.

The third observation emanates from price adjusted consumption levels. While there has been some increase in real consumption expenditure of households in most of the states under study, there are three states where it has declined over the two NSS rounds. These are Kerala, Maharashtra, and Orissa, with the highest decline was noticed in Kerala.

2.4.1: Changes in Average Consumption Level by Social Groups: 1995-96 and 2004

Preceding results raise strong possibilities of major differentials in levels of consumption expenditure by households drawn from different social groups. Likewise, there may be questions such as: how does the real per capita consumption expenditure of lower caste households compare overtime? Or, what has happened to the Scheduled Tribe households over these years? Similarly, between the SC and ST, which one is doing better? How about the consumption inequalities of households separated by different social groups? In response to some of these questions, we tried to rework the Table 4 (a) by three caste classifications. Table 4 (b) provides the

round was based on 12 months average, while for the 60th round it relies on 6 months average covering January-June 2004.

PCMCE for the Scheduled Caste households followed by another two tables with similar details for the Scheduled Tribes and the 'Others'.

Table 4 (b): Per Capita Monthly Consumption Expenditure (MPCE) of Rural Households with 60+ Co-residents: Scheduled Castes

(Indian Rupees)

All India and States	MPCE: 52 nd Round (July 1995 – June 1996)			MPCE: 60 th Round (Jan. – June 2004)		
	MPCE (Nominal)		CPI (AL) Adjusted MPCE (1986-87=100)	MPCE (Nominal)		CPI (AL) Adjusted MPCE (1986-87=100)
	Rs.	CV		Rs.	CV	
A. Pr.	265.37	39.34	110.13	461.31	44.96	135.34
Bihar	249.09	33.53	103.38	379.76	34.70	111.42
Gujarat	361.44	41.58	150.00	589.41	32.54	172.93
Haryana	356.78	35.08	148.07	602.94	39.23	176.90
Himachal Pr.	382.94	42.95	158.93	590.04	46.94	173.11
Karnataka	263.80	40.08	109.48	445.75	40.40	130.78
Kerala	365.18	77.13	151.56	561.76	47.56	164.82
Madhya Pr.	309.63	36.75	128.50	425.55	57.76	124.85
Maharashtra	327.33	41.90	135.85	431.94	40.64	126.73
Orissa	242.58	32.36	100.67	338.92	35.28	99.44
Punjab	462.67	52.51	192.02	683.55	45.94	200.55
Rajasthan	359.83	40.56	149.33	517.55	41.27	151.85
Tamil Nadu	294.91	38.17	122.39	501.44	36.90	147.12
Uttar Pr.	280.11	43.72	116.25	456.73	43.37	134.00
West Bengal	290.42	37.87	120.53	478.40	43.89	140.36
India	312.75	48.66	129.80	484.25	46.75	142.08

Source: NSS 52nd round (July 1995-June 1996), and 60th round (Jan.-June 2004), Household Data CD.

Note: As in Table 4(a).

Several interesting results follow from the tables mentioned above. One is the fact that the real per capita consumption expenditure of SC households has grown marginally during 1995-96 and 2004 in most of the states barring Maharashtra,

Madhya Pradesh and Orissa, with Maharashtra at the top. The same was also true for the tribal households in

Table 4 (c): Per Capita Monthly Consumption Expenditure (MPCE) of Rural Households with 60+ Co-residents: Scheduled Tribes

(Indian Rupees)

All India and States	MPCE: 52 nd Round (July 1995 – June 1996)			MPCE: 60 th Round (Jan. – June 2004)		
	MPCE (Nominal)		CPI (AL) Adjusted MPCE (1986-87=100)	MPCE (Nominal)		CPI (AL) Adjusted MPCE (1986-87=100)
	Rs.	CV		Rs.	CV	
A. Pr.	267.87	37.31	111.17	502.78	69.00	147.51
Bihar	228.92	36.69	95.01	403.35	35.82	118.34
Gujarat	336.60	62.26	139.70	492.16	44.34	144.40
Haryana	-	-	-	-	-	-
Himachal Pr.	490.85	37.03	203.71	789.42	64.58	231.61
Karnataka	259.86	41.31	107.84	390.51	34.46	114.57
Kerala	389.59	53.20	161.69	663.24	73.33	194.59
Madhya Pr.	259.88	35.63	107.85	374.17	46.34	109.78
Maharashtra	284.53	44.02	118.08	457.23	41.84	134.15
Orissa	216.40	30.76	89.81	277.83	39.84	81.51
Punjab	-	-	-	-	-	-
Rajasthan	307.68	31.91	127.69	471.21	37.82	138.25
Tamil Nadu	248.39	43.84	103.09	374.43	45.71	109.86
Uttar Pr.	288.19	38.13	119.61	592.54	96.06	173.85
West Bengal	252.92	35.77	104.97	413.08	42.36	121.19
India	314.75	52.18	130.63	505.84	92.30	148.41

Source: NSS 52nd round (July 1995-June 1996), and 60th round (Jan.-June 2004).

Household Data CD.

Notes: As in Table 4(a). No Scheduled Tribe respondent was reported in Haryana and Punjab.

Table 4 (d): Per Capita Monthly Consumption Expenditure (MPCE) of Rural Households with 60+ Co-residents: Others

(Indian Rupees)

All India and States	MPCE: 52 nd Round (July 1995 – June 1996)			MPCE: 60 th Round (Jan. – June 2004)		
	MPCE (Nominal)		CPI (AL) Adjusted MPCE (1986-87=100)	MPCE (Nominal)		CPI (AL) Adjusted MPCE (1986-87=100)
	Rs.	CV		Rs.	CV	
A. Pr.	348.30	58.35	144.55	543.18	53.00	159.37
Bihar	297.77	40.36	123.58	461.03	50.93	135.26
Gujarat	439.84	53.23	182.54	721.68	49.01	211.74
Haryana	499.12	50.89	207.14	751.04	51.01	220.35
Himachal Pr.	442.00	53.03	183.44	729.82	51.54	214.13
Karnataka	354.14	53.35	146.98	532.52	47.39	156.24
Kerala	469.90	68.16	195.02	805.14	85.15	236.22
Madhya Pr.	346.81	49.12	143.93	470.12	104.35	137.93
Maharashtr a	359.72	50.90	149.29	549.04	44.96	161.08
Orissa	313.88	47.23	130.27	411.48	53.49	120.73
Punjab	587.43	46.44	243.79	996.23	67.08	292.29
Rajasthan	396.86	35.64	164.70	604.48	72.73	177.35
Tamil Nadu	360.87	48.87	149.76	620.70	62.46	182.11
Uttar Pr.	343.87	54.42	142.71	555.05	100.67	162.85
West Bengal	368.24	46.45	152.83	550.56	57.61	161.53
India	377.62	55.40	156.72	587.76	74.37	172.45

Source: NSS 52nd round (July 1995-June 1996), and 60th round (Jan.-June 2004).

Household Data CD.

Notes: As in Table 4 (a).

Orissa, and for the 'Others' both in Orissa and Madhya Pradesh.

Regarding variations in per capita household consumption expenditure with in states or at the all-India level, we notice that this phenomenon remains stronger for the tribal households followed by the 'Others'. It also grew over-time. In case of the Tribal households, for example, the all-India coefficient of variation has risen from 52.18 in 1995-96 to 92.3 in 2004, implying growing consumption inequalities among households over these years. It however presents a mixed situation at the state level. The states like Haryana, Gujrarat, Maharashtra, and Karnataka, for instance, have

shown an over time decline in their CVs, while a reverse has happened with the rest (Table 4-c).

Comparing the three social groups under reference, we notice that the 'Others' have outperformed their SC and ST counterparts with varyingly higher PCMCE in almost every state and over both the years. The only exception is Himachal Pradesh where the ST had an edge. And yet, none of these groups have on an average been able to reach one dollar a day benchmark.

As a whole, these results clearly reveal the pathetic conditions of a large number of rural households including their elderly co-residents with highly inadequate resources at their disposal to meet their day-to-day consumption requirements. The inadequacy of financial resources may also raise several questions about the quality of their living conditions and the extent to which many of them would really be able to share the benefits emanating from the current economic regime in the country. Will these people be able to create a sustainable society either for themselves or contribute towards creation of such a society for the next generation are some other big questions that elude an answer at least from this analysis.

3. Health Conditions of Rural Aged

The meager finances available in most states to average rural households for their consumption requirements speak for themselves and make the social quality or the quality of life issues in India as more or less inconsequential. This can also be seen as one of the embedding factors into the situation described at the very beginning — namely, prolongation of later life years that remains mired on account of serious ailments and functional incapacitations — making much of these later years as a painful experience for many. Another dimension of this entire issue relates to the declining utilization of public health services even by low-income households for lack of service quality. Some of the recent studies on health clearly suggest growing out-of-pocket expenses by households, forcing many to face indebtedness and penury (National Macroeconomic and Health Commission Report, 2005). Against this backdrop, it may be of some use to extract the post-60 health conditions of persons across the major states under consideration. Two exercises are reported below, each using NSS 60th round data for the rural households.⁶ One is relating to the self-assessed health conditions of the older men and women. And the second provides a bivariate distribution of persons suffered by single and multiple diseases. As noted, both are by states and account for differences between households of different social groups, gender and two broad age categories, i.e., 60-74 and 75+.⁷ At least three

⁶ We refrain making comparisons between 52nd and 60th rounds of the NSS for comparability problems.

⁷ A further sub-classification has not been tried owing to inadequacy of the sample population.



policy inferences may be drawn from these exercises. One is expected to make out a case for streamlining the rural health care facilities, especially in areas with higher percentages of morbid old. The second inference may seek to initiate measures for geriatric support provisioning in the country. With large percentages of ailing and physically disabled aged, there would be a risk of growing unmet dependencies in activities of daily living (ADL). A third inference may go as a pointer to the fact that the old age health cannot be tackled with out gearing to make the later life as a major public health issue.

3.1: Old Age Health: Self Assessments Provided by Rural Old

Two questions were asked by the NSS to seek self-assessed health status of its 60+ respondents: (i) rate your current health status by choosing from 'very good', 'good', 'bad', and (ii) compared to the last year, do you consider your current health status as 'much better', 'somewhat better', 'nearly the same', 'somewhat worse' and 'worse'? We have focused on options suggesting 'bad' in question one, and 'somewhat worse' and 'worse' in question two. Table 5(a) provides the responses based on the first question. These responses are both combined and separated for three social groups as before. This

Table 5 (a): Rural Aged Reporting Poor Health Conditions
Total & Different Social Groups: NSS 60th Round

Major States & All India	Social Groups (%)			
	All Social Groups	ST	SC	Others
A. Pr.	26.6	21.6	29.7	26.1
Bihar	26.0	59.9	30.4	24.5
Gujarat	13.2	17.1	18.1	11.5
Haryana	18.4	-	24.3	16.6
Himachal Pr.	18.3	17.1	14.8	19.8
Karnataka	19.4	18.4	24.3	18.5
Kerala	40.0	17.2	45.9	39.6
Madhya Pr.	24.3	24.5	25.7	23.9
Maharashtra	18.2	17.7	23.9	17.2
Orissa	30.5	24.9	33.1	31.8
Punjab	19.1	-	20.8	18.2
Rajasthan	21.9	15.1	24.2	22.4
Tamil Nadu	13.4	18.8	13.1	13.4
Uttar Pr.	26.5	4.8	26.3	26.7



West Bengal	38.5	26.2	36.1	40.1
India	24.4	19.8	26.8	24.3

Source: NSS 60th Round (Household Data CD).

table clearly suggests that a big percentage of rural old do not consider themselves in good health. This percentage is though somewhat moderate at the all-India level — over 24 percent — it goes as high as 40 percent in Kerala, 38.5 percent in West Bengal, 30.5 percent in Orissa, and around 26 percent in U.P. and Bihar, etc. Also there appears to be high variations across states and social groups with Scheduled Castes seem to be in worst condition in several states (Table 5a).

An age-sex break-up of respondents reporting poor health is given in Table 5 (b). This table indicates that the elderly women considering themselves in poor health are much bigger in size. This can be noticed for most of the states barring Haryana where a reverse is true. This problem turns out to be much worst in case of *Older Old*. Table 5 (b) reveals that more than half of 75+ populations in Kerala, Orissa, and West Bengal described themselves as in bad health. At the all-India level this percentage is over 40

Table 5 (b): Age and Sex-wise Distribution of Rural Aged Reporting Poor Health

NSS 60th Round

Major States & All India	Responses by Gender and Age Distributions (%)			
	Gender		Age Groups	
	Male	Female	60 – 74	75+
A. Pr.	22.5	30.4	24.5	39.3
Bihar	22.4	30.6	22.4	49.4
Gujarat	11.0	15.4	12.1	19.3
Haryana	18.7	18.2	15.4	28.9
Himachal Pr.	17.7	18.9	15.5	29.2
Karnataka	17.5	21.4	18.6	25.3
Kerala	39.1	40.8	34.4	54.6
Madhya Pr.	22.9	25.8	21.0	49.2
Maharashtra	17.8	18.6	16.0	31.7
Orissa	24.3	37.3	27.9	50.5
Punjab	13.3	25.1	17.9	26.9
Rajasthan	18.5	25.1	18.0	42.5
Tamil Nadu	13.3	13.6	11.8	22.2
Uttar Pr.	23.5	29.6	23.6	42.0
West Bengal	34.8	42.2	35.3	55.7
India	21.7	27.2	21.6	40.4

Source: NSS 60th Round, January – June 2004 (Household Data CD).

percent suggesting out of every five two *older old* in rural areas consider themselves as health deficient.

Table 6 (a) provides size of elderly persons in observed states reporting a conceivable decline in their health conditions over the past one year. Two observations need to bear greater attention from these details. One, Scheduled Tribe population is not as much prone to declining health conditions over a shorter time span as SC or ‘Others’. This can particularly be noticed for states like Madhya Pradesh, Bihar, Karnataka, Tamil Nadu, etc. Two, populations reporting deterioration in health conditions in many states

Table 6 (a): Rural Aged with Deteriorating Health: Major Social Groups
NSS 60th Round

Major States &	Social Groups (%)
----------------	-------------------

All India	All Social Groups	ST	SC	Others
A. Pr.	20.5	22.9	20.9	20.1
Bihar	20.6	7.2	23.0	20.3
Gujarat	12.9	12.6	16.6	12.3
Haryana	27.7	-	34.5	25.6
Himachal Pr.	23.9	24.0	24.7	23.6
Karnataka	16.3	11.0	27.7	14.5
Kerala	31.2	47.8	28.0	31.4
Madhya Pr.	17.2	12.5	17.5	18.8
Maharashtra	16.5	15.3	19.2	16.2
Orissa	22.5	20.1	26.4	22.2
Punjab	21.8	-	26.4	19.3
Rajasthan	18.1	15.1	14.5	19.7
Tamil Nadu	11.0	14.3	11.7	10.7
Uttar Pr.	24.1	5.1	25.7	23.7
West Bengal	36.7	34.3	33.5	38.1
India	21.4	17.0	23.2	21.4

Source: NSS 60th Round, January – June 2004 (Household Data CD).

are substantial in size and, if it allows to persist, a significant proportion of this population may face early senescence and fall below the physical threshold level necessary for functional competence. As the country in general and rural areas in particular do not have even rudimentary infrastructure to provide necessary care for the disabled old, this can be an alarming situation for growing number of households.

Table 6 (b): Age & Sex Distribution of Rural Aged with Deteriorating Health
NSS 60th Round

Major States & All India	Sex (%)		Age Groups (%)	
	Male	Female	60-74	75+
A. Pr.	18.1	22.7	19.1	28.9
Bihar	18.8	23.0	18.8	32.8
Gujarat	12.5	13.2	11.8	18.7
Haryana	26.8	28.6	22.9	44.4
Himachal Pr.	24.4	23.5	23.2	26.9
Karnataka	13.6	19.2	15.3	23.9
Kerala	30.4	31.8	27.2	41.5
Madhya Pr.	16.2	18.3	15.8	28.2

Maharashtra	14.9	18.1	14.9	26.4
Orissa	20.7	24.5	21.3	31.4
Punjab	17.3	26.4	20.4	31.1
Rajasthan	15.3	20.7	13.4	42.8
Tamil Nadu	11.3	10.7	10.0	16.3
Uttar Pr.	22.6	25.5	21.9	35.4
West Bengal	32.3	41.1	35.7	42.4
India	19.5	23.3	19.4	32.5

Source: NSS 60th Round, January – June 2004 (Household Data CD).

Table 6(b), which follows Table 5(b), tends to reinforce a number of our earlier observations and shows that the worsening in relative health conditions are reported more frequently by women than men, and also by people in *older old* (or 75+) category. In a public policy perspective, it foresees a need for states with more of aged in declining health conditions such as Kerala, Orissa, UP, West Bengal, Haryana, Bihar, etc., to focus on streamlining their rural health infrastructure well beyond the frontiers of family planning and reproductive health.

3.2: *Distribution of Aged by Single and Multiple Diseases/Disabilities*

Compared with previous rounds, disease profiling of aged in 60th round is slightly different. To illustrate, the 52nd round followed a *usual health procedure*.⁸ The 60th round, on the other hand, uses *disease/s existed on the day of the survey*. Ailments and disabilities collected in 60th round, *inter alia*, include cases of:

- Visual, hearing, speech, locomotor and mental disabilities;
- Damages of all types as result of accidents or injuries such as cuts, wounds, hemorrhage, fractures and burns to any part of the body; and
- All forms of diseases ranging from cardiac, abnormal blood pressure, renal, respiratory, diabetes, impairments of eyes and ear, all forms of cancer, joint related diseases, etc.⁹

⁸ This procedure implies that if some one had suffered any time from any of the specified chronic diseases in the past, s/he had also been considered to be suffering from that disease on the date of the survey. The idea was that the chronic diseases are usually persisting and incurable (NSSO 52nd Round, Report No. 446 (52/25.0/3).

⁹ Against a total of 8 diseases in 52nd round, 60th round identifies a list of 41 diseases and the respondents were asked to report a maximum of five diseases from the list. The uncovered diseases were reported under 'any other'. The five disabilities considered in 52nd and 60th rounds however remained the same (for details, see NSSO Report No. 507 (60/25.0/I).



Based on the criterion used in 60th round, Table 7(a) distributes the aged into sick and non-sick in states under consideration.¹⁰ The sick are further distributed into ‘single’ and ‘multiple’ ailments to re-emphasize the earlier contention suggesting the need for creation (or up gradation) of rural health services, especially in higher disease states.

¹⁰ Note that bringing down reference period is likely to squeeze the disease prevalence level among the old.

Table 7(a): Rural Aged with and Without Ailments or Disabilities by Major
Social Groups: NSS 60th Round

	Disease Prevalence by Social Groups (%)											
	All Social Groups			Scheduled Tribe			Scheduled Caste			Others (Non-SC/ST)		
	No	Singl e	Mult iple	No	Singl e	Mult iple	No	Singl e	Mult iple	No	Singl e	Mult iple
A. Pr.	56.9	34.2	8.9	65.8	25.4	8.8	58.3	36.3	5.4	55.8	34.2	10.0
Bih.	69.1	23.9	7.0	81.6	9.9	8.5	75.1	19.3	5.5	67.6	25.1	7.3
Guj.	62.9	30.8	6.3	69.6	22.4	8.0	50.4	38.3	11.3	63.5	31.5	5.1
Har.	72.7	20.8	6.5	0.0	0.0	0.0	76.3	18.2	5.5	71.6	21.6	6.9
H. Pr.	65.3	27.4	7.3	67.7	30.6	1.7	70.9	25.7	3.4	63.0	28.0	9.1
Kar.	67.1	27.4	5.5	72.4	25.9	1.7	62.9	33.7	3.3	67.4	26.3	6.3
Ker.	40.4	41.6	17.9	33.2	25.5	41.3	48.6	33.5	17.8	39.5	42.8	17.7
M. Pr.	68.8	24.2	7.0	77.2	13.7	9.1	72.8	25.1	2.2	64.7	27.6	7.6
Mah.	58.8	32.2	8.9	60.5	32.7	6.8	71.6	22.9	5.5	56.1	34.0	9.8
Ori.	75.6	18.5	5.9	82.2	13.9	3.9	75.2	18.5	6.3	73.3	20.2	6.5
Pun.	57.5	33.8	8.7	0.0	0.0	0.0	59.9	31.9	8.2	56.2	34.9	8.9
Raj.	76.5	19.1	4.4	87.2	11.7	1.1	79.0	18.0	3.0	74.0	20.7	5.4
T. N.	73.2	23.5	3.3	99.3	0.7	0.0	77.1	18.8	4.1	71.4	25.5	3.1
U. P.	59.6	33.2	7.2	92.8	6.0	1.2	57.5	34.4	8.0	59.9	33.1	7.0
W. Ben	47.1	36.5	16.3	68.9	28.6	2.5	52.0	35.4	12.7	43.7	37.6	18.7
India	62.7	29.1	8.2	73.9	19.9	6.2	64.3	28.4	7.3	61.0	30.4	8.6

Source: NSS 60th Round, January – June 2004 (Household Data CD).

Some of the results presented in Table 7(a) are however not on expected lines. To illustrate, it may be noticed from this table that the share of higher caste sick (single and multiple ailments combined) is markedly higher than those from the remaining two social groups – i.e., SC and ST. Further, this is resulting in more than two thirds of the observed rates except Orissa, Gujarat, Maharashtra and Uttar Pradesh. The same is reflected at the all-India level as well — the morbid ‘Others’ at the all-India level is turning out to be 39 percent as against 36 percent SC and merely 26 percent ST. Two questions arise from these results. One, does Table 7(a) a reality? If so, it would amount to suggest that the tribals and low caste people in India are healthier and the caste affiliation of individuals, a harsh reality of Indian social system, has no bearing on matters of personal health? The next question relates to the size of older persons reported sick in various states on the date of the survey. The first

question – i.e., morbid SC/ST Vs. ‘Others’ – in our view involves issues like *awareness or knowledge* about self-health and morbidity.¹¹ The low magnitude of reported sickness in states like Orissa or Rajasthan might have resulted because of the question itself and the way it was paraphrased.¹² Nonetheless, a more definitive answer to both of these questions needs further insight.

Health comparison of SC and ST, likewise, also falls short of general expectation in many states as the share of tribals reporting sick remains much less than their SC counterparts (Table 7a). This may particularly be noticed in states like Andhra Pradesh, Gujarat, Karnataka, Madhya Pradesh, Orissa, Punjab, UP, Tamil Nadu, etc. Considering the fact that the Tribals are largely poor and socially underprivileged, a sickness gap of this magnitude between them appears less convincing. A similar observation follows given the very low percentages of older adults reporting multiple diseases in a number of states such as Tamil Nadu, Rajasthan, Gujarat, Bihar, Orissa and so on.

Table 7(b): Sex-wise Distribution of Rural Aged with or Without Ailments/Disabilities
NSS 60th Round

India and Major States	Rural Male (%)			Rural Female (%)		
	No	Single	Multiple	No	Single	Multiple
A. Pr.	54.5	35.8	9.8	51.0	38.7	10.3
Bihar	67.9	24.7	7.4	65.8	26.7	7.5
Gujarat	62.4	31.9	5.7	60.8	33.5	5.7
Haryana	71.8	22.6	5.6	66.8	28.0	5.2
Himachal Pr.	64.6	30.0	5.5	66.5	27.7	5.8
Karnataka	62.4	31.3	6.3	66.0	26.8	7.2
Kerala	42.8	42.6	14.7	39.0	40.5	20.5
Madhya Pr.	68.3	23.9	7.8	64.5	26.8	8.6
Maharashtra	57.3	33.9	8.8	52.1	36.0	11.9
Orissa	76.2	18.7	5.1	70.2	21.1	8.7
Punjab	58.1	31.4	10.5	49.4	41.0	9.6
Rajasthan	72.6	21.7	5.6	70.8	24.0	5.1

¹¹ Many illiterate, for example, do not know that they are diabetic or running high/low blood pressure.

¹² The underlying question in the survey was: ailments on the date of enquiry. Many people – especially the illiterate – may have faltered on this question.

Tamil Nadu	70.1	25.6	4.4	71.6	24.6	3.8
Uttar Pr.	59.0	33.9	7.1	57.0	34.9	8.1
West Bengal	47.9	37.9	14.1	44.6	37.5	17.9
India	63.1	28.9	8.0	59.2	31.3	9.5

Source: NSS 60th Round (Household Data CD).

Table 7(c): Age-wise Distribution of Rural Aged with and Without Ailments/Disabilities: NSS 60th Round

India and Major States	60-74 (%)			75+ (%)		
	No	Single	Multiple	No	Single	Multiple
A. Pr.	54.7	36.0	9.3	40.8	44.4	14.8
Bihar	68.7	24.6	6.7	56.8	31.5	11.7
Gujarat	62.1	32.5	5.5	59.1	33.9	7.0
Haryana	71.3	24.7	4.0	63.0	26.9	10.2
Himachal Pr.	67.7	27.6	4.7	56.8	33.8	9.4
Karnataka	65.7	28.2	6.1	53.7	35.2	11.1
Kerala	40.8	43.2	16.0	40.1	36.5	23.4
Madhya Pr.	67.7	25.4	6.9	57.9	25.0	17.1
Maharashtra	56.4	34.0	9.6	45.3	40.2	14.5
Orissa	75.0	19.3	5.7	61.4	23.6	15.0
Punjab	53.8	35.7	10.5	54.4	38.0	7.6
Rajasthan	73.5	21.3	5.2	63.3	30.7	6.0
Tamil Nadu	71.4	24.3	4.2	67.3	29.2	3.5
Uttar Pr.	59.1	34.3	6.6	52.7	35.0	12.4
West Bengal	48.2	36.9	14.9	37.1	41.4	21.5
India	63.0	29.3	7.7	51.7	34.2	14.2

Source: NSS 60th Round (Household Data CD).

Gender and age-wise break-up of older persons reporting ailments on the date of enquiry are furnished in Tables 7(b) and 7(c), respectively. While much of these tables are on expected lines, two points need to draw attention on policy considerations. First, the elderly women are turning out to be far more morbid than men in all the states except Tamil Nadu. It clearly supplements our earlier contention



suggesting stronger gender dimensions of ageing and poor physical and functional health of aged in India. Second, physical age of individuals turns out to be an important determinant of old age sickness and also a key driver in almost every state to bring the existing rural health services under immense pressure over the coming years. This can clearly be noted by the size of *older old* (75+) reporting single or multiple diseases or disabilities in most of the observed states. States like Andhra Pradesh, West Bengal, Maharashtra, Punjab, Uttar Pradesh, Kerala, Karnataka are all facing high prevalence of diseases — over two-fifth to one third of their respective populations — and, therefore, need to concentrate on devising policies and creating necessary infrastructure required to improve the health — and eventually the socio-economic environment — of the elderly population in the country. Presently, any such attempt at the policy level largely appears missing.

4. Socio-Economic Disparities and Health Outcomes

A growing volume of literature now exists to suggest the role of socio-economic characteristics influencing the health outcome of individuals (Crimmins and Seeman, 2004; Seeman and Crimmins, 2001). Much of this literature is however confined to studies conducted for the developed countries (Smith, 2004; Smith, 1999). In developing countries, and especially in India, some recent attempts to this direction have remained largely confined to reproductive health issues of women from different socio-economic strata (Ranjan and Stones, 2004; DFID, 2003). How far these factors affect the health or functional disablement of older adults is at best at a nascent stage (Gupta and Sankar, 2002; Alam 2004; Alam and Mukherjee 2005, etc).

Following Crimmins and Seeman (2004), attempts have been made below to present a few logistic regressions exercises with a view to explore a few of important socio-economic factors in health outcomes of older adults at the all India level.¹³

¹³ The underlying hypothesis in these exercises suggests that the socio-economic conditions along with age and sex of individuals are significant in shaping their: (i) over all health conditions, and (ii) the onset of diseases (see sections 3.1 and 3.2). The over all health condition was proxied by the NSSO based on the following two questions. One was to rank the *current health status* of respondents into: (i) very good, (ii) good/fair, and (iii) worse. The other was to rank the *relative health status* of the respondents, assessed by asking: compared to last year, are you currently feeling: (i) much better, (ii) somewhat better, (iii) nearly the same, (iv) somewhat worse, and (v) worse? In addition, the NSS 60th round also provides data on a maximum of 5 diseases suffered by the individuals on the date of the survey.

Methodologically, the count data models (CMDs) usually rely on Poisson distribution with parameter λ_i , which is related to the explanatory variable X_i . A major limitation of this distribution



Two specifications have been tried: one, a multinomial logit to examine factors affecting the current and the relative health conditions of responding old (section 3.1). This is followed by another exercise based on a count data model (CDM) to explore similar risk factors associated with multiple conditions reported by the rural old (section 3.2). Among other things, these exercises are expected to feed the issues of old age health into the wider debate on social quality and quality of life in South Asia sub-region – more particularly in India. This aspect, and particularly how critically the health outcomes relate to one’s socio-economic conditions, has largely been completely missed in most of this region.

Box 1: Variables in Estimation of Multinomial and CDM Regressions

Data Source: NSS 60th round

Models	Explained Variables	Explanatory Variables (X_i)
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however lies with its assumption that the conditional mean and variance are equal. In reality, however, this may not be true. A negative binomial, which has by formulation a cross sectional heterogeneity, has therefore been suggested in the literature (Greene 2002; Long, 1997; Cameron and Trivedi, 1986). The Poisson model is generalized by introducing an individual, unobserved effect into the conditional mean (i.e., $\ln \lambda_i = X'_i \beta + \epsilon$). This leads to bringing about a difference in the conditional mean and conditional variance. We have therefore tried to follow this procedure in the exercise reported below.

The multinomial logit, a simple extension of binary logit, is made difficult if large number of comparisons are involved. This model is applied to capture the socio-economic and age effects on five different responses pertaining to over-time changes in health conditions of responding old. To minimize number of comparisons (or outcome categories), we curtailed total responses into three: (i) much better and somewhat better, (ii) nearly the same, and (iii) somewhat worse and worse. For further details, see Long (1997, Chapter 6).



<p>1. Multinomial Logit</p> <p>2. Count Data Regression/Odds Ratios: (Negative Binomial)</p>	<p><u>1. Current Health Status:</u> (a). Excellent (b). Food/Fair (c). Poor</p> <p><u>2. Relative Health Status:</u> (a) Good (b) Almost the same as last year, (c) Worse</p> <p><u>3. Count of Diseases:</u> (a) No disease (b) Single disease (c) Multiple diseases</p>	<p>dSoclgr: social group; ST = 1, SC = 2, Others = 3 dSex: Male = 1; Female 0 dAge: 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 MPCE = households' per capita monthly consumption expenditure dStatecoind = economic dependence dummy; Independent = 1, Others = 0 dWidow = widow = 1, Others = 0 dTpdrain = type of drainage: open kutchha = 1, open pucca = 2, covered pucca = 3, under gound = 4, no drainage = 5. HHDtotalex: Total expenditure of households including loans and gifts. drinkwatrtreat: treated drinking water</p>
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Table 8(a): Multinomial Logit: Effects of Socio-economic Factors on Current Health#

Dependent Variable: Own perception about current health

Number of observations: 21, 126

Socio-economic Factors	(2 versus 1)				(2 versus 3)			
	Coefficients	Std. Err.	z	P> z	Coefficients	Std. Err.	z	P> z
Constant	-2.748	0.163	-16.890	0.000	-1.205	0.089	-13.480	0.000
dsoclgr	-0.172*	0.046	-3.730	0.000	0.111*	0.025	4.410	0.000
dAge	-0.193* *	0.114	-1.690	0.090	0.676* *	0.041	16.330	0.000
dSex	0.169 @	0.077	2.190	0.028	-0.020 @	0.037	-0.550	0.586
dEducation	0.151* @	0.041	3.690	0.000	-0.042 @	0.027	-1.570	0.116
MPCE	0.000 @	0.000	2.670	0.008	0.000 @	0.000	-2.510	0.012
dStatecoind	0.759* @	0.070	10.820	0.000	-0.884* @	0.041	-21.590	0.000
dWidow	-0.005	0.079	-0.070	0.948	0.042	0.036	1.150	0.251
tpdrain	-0.060* @	0.019	-3.220	0.001	0.056* @	0.010	5.830	0.000

Current Health: 1. Excellent. 2. Good/ fair. 3. Poor. *Good/fair (2) is the comparison group.*

* Significant at 1 percent level. @ Significant at 5 percent level. ** Significant at 10 percent level.

Box 1 lists the variables — explained and explanatory — used to estimate both the models described above. These variables have been identified after trying several specifications, and turn out to hold significant association with the health outcomes of the rural old. The three results are given in Tables 8(a) to 8(c).

As was noted, Tables 8(a) and 8(b) present results based on multinomial logit using current and relative health conditions as the left hand side variables. These results, as a whole, strongly underpin the need for evolving a social quality with minimum standards of socio-economic entitlements for average people. Both the tables strongly signify the need for improvements in socio-economic conditions of average old, and come out with host of important observations. To be precise, both

the tables clearly reveal that the socio-economic conditions may or may not be effective in causing major health gains, but these are indeed critical in making people to face serious health deficits in later ages. Table 8(a), which compares the current health status of 60+ by using those in good health condition as the reference category (see Box 1), reveal that the lower

Table 8(b): Multinomial Logit: Factors Affecting Changes in Relative Health

Dependent Variable: Own perception about relative health

Number of observations: 21, 118

	1. Changes in Relative Health: Excellent (2 versus 1)				3. Changes in Relative Health: Worsened (2 versus 3)			
	Coefficients	Std. Err.	z	P> z	Coefficients	Std. Err.	z	P> z
Socio-economic Factors								
Constant	-1.450	0.106	-13.630	0.000	-1.357	0.093	-14.560	0.000
dsoclgr	-0.115*	0.030	-3.820	0.000	0.088*	0.026	3.330	0.001
dAge	-0.081	0.064	-1.260	0.206	0.520*	0.044	11.920	0.000
dSex	0.045	0.048	0.930	0.351	-0.020	0.039	-0.520	0.606
dEducation	0.091*	0.030	3.060	0.002	0.015	0.027	0.530	0.594
MPCE	0.000 @	0.000	2.490	0.013	0.000 @	0.000	2.640	0.008
dStatecoind	0.193*	0.045	4.290	0.000	-0.618*	0.042	-14.870	0.000
dWidow	-0.056	0.048	-1.160	0.247	0.073* *	0.038	1.890	0.058
tpdrain	-0.016	0.011	-1.300	0.193	0.028 @	0.010	2.850	0.004

Note: Relative Health: Excellent compared to last year, (ii) Nearly the same as last year, and (iii) worsened. Castigatory (ii) is the comparison group.

* Significant at the 1 percent level. @ Significant at the 5 percent level. ** Significant at the 10 percent level.

caste, *older old*, illiterate, economically dependent, households without proper drainage facilities and with low per capita monthly consumption expenditure are more likely to suffer from poor health outcomes (see 2 versus 3 results in 8a) than others

enjoying better socio-economic conditions. Economic status — determined on the basis of post-60 earning sources — emerges as one of the most potent factors in evolving the health outcomes over later life years. Further, most of these factors are bi-directional in outcomes and liable to increase the distance from 2 to 1 (i.e., good to excellent health) or from 3 to 2 (i.e., poor to good health). Nevertheless, the effect is apparently little higher in latter direction. All these factors are highly significant statistically too.

Effects of socio-economic factors, likewise, are turning out to bear considerably in shaping the relative health conditions of sample aged as well. Following Table 8(a), Table 8(b) also compares the older respondents with three differentiated health outcomes: (i) excellent compared with last year, (ii) same as last year, and (iii) worsened over time; second being the comparison group. By and large, these results are completely in tune with the findings in Table 8(a), and indicate that the caste disadvantages (dsoclgr), illiteracy (dEducation), members of lower consumption households (MPCE), widows, *older old*, and those economically dependent (dStatecoind) may not have their relative health either good or excellent. Rather, most of these factors are likely to make relative health outcomes worse. These factors also turn out to be highly significant statistically with expected signs.

The CDM results, presented in Table 8©, also lead to draw similar inferences and indicate that the poor socio-economic factors and low caste affiliations may cause elders to face the risk of multiple conditions (diseases or disabilities) with very high odds. A perusal of Table 8© indicates that the SC/ST, *older old*, illiterate, women, poor,

Table 8 ©: Negative Binomial Regression Results: Risks of Multiple Conditions

Dependent Variable = Number of Diseases

Number of Observations = 21831

Coefficients	Negative Binomial Results				IRR (Odds ratios)			
	Coef.	Std. Err.	z	P> z	IRR	Std. Err.	z	P> z
Constant	-0.818	0.059	-13.830	0.000	-	-	-	-
dsoclgr	0.098*	0.015	6.510	0.000	1.103	0.017	6.510	0.000
dAge	0.291*	0.024	12.290	0.000	1.338	0.032	12.290	0.000
dSex	-0.036**	0.021	-1.710	0.087	0.965	0.020	-1.710	0.087
dEducation	0.080*	0.014	5.610	0.000	1.083	0.015	5.610	0.000
MPCE	0.000*	0.000	6.860	0.000	1.000	0.000	6.860	0.000
dStatecoin	-0.401*	0.023	-17.200	0.000	0.669	0.016	-17.200	0.000



drinkwatrt	-0.126*	0.022	-5.680	0.000	0.881	0.020	-5.680	0.000
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* Significant at the 1 percent level. ** Significant at the 10 percent level.

financially dependent and those without access to treated water for drinking purposes are at a much higher risk to suffer from more number of diseases or disabilities. The odds are particularly high for persons from lower caste, low consumption categories, illiterate and over 75 years of age. All these factors, therefore, need to be accounted for in any perspective planning for creating a viable social system in a country like India with socio-economic factors meeting some of these basic needs of rural people to ensure healthy later life and an inclusive society.

5. Concluding Observations

With demographic changes on, India is poised to face major age structure changes with accelerating growth in adult population, particularly those aged 60 or more. Several projections reveal that the size of this population is expected to hover around 100 million by the end of this decade and also followed by gradual elongations in their life span. It may as well remain an undisputed fact that a big majority of this population, close to three quarters of the total, will stay back in villages all over the country. With these simple facts in sight, there are numerous embedding issues and needed social quality to ensure survival of older adults in later ages with certain degrees of socio-economic security, inclusive environment and physical health. This paper was basically designed to look into some of these aspects, in particular the share of rural aged in most major states in the country and their distribution by three broad social groups (SC, ST and ‘others’) and two age categories (60-74 and 75+). Another important objective that led to evolve this exercise was to make an assessment about their socio-economic conditions, some of their basic disparities, and the resulting health outcomes. The latter part of this analysis, as may be noticed, was essentially to supplement some of the earlier assertions suggesting that many of the elders in India, and particularly in rural areas, are still in most trying socio-economic conditions and lack an environment that may help to sustain them in their later life without fading into destitution and poor health. This happens despite some nimble attempts in recent years by the Centre and state governments to transfer on means tested basis a small sum to the destitute old. Notwithstanding these measures, some of the observations emanating from this paper remain skeptical about the ageing scenario or the quality of later life in India without an easy solution in sight.

Based on household consumption expenditure data over two points of time (i.e., NSS 52nd and 60th rounds), an attempt was made in this analysis to examine changes in per capita monthly consumption level of households with elderly co-residents – both by major states and in real and nominal terms. As was expected, while social groups differentiated variations in per capita expenditure were evident in



almost every state, these computations also bring out the fact that the average consumption level of rural old (or non-old) may in no way suffice or make them secured against the blows of later life. Further, in real terms, there has hardly been a marked change in consumption expenditure over the years under comparison.

With in this perspective, we tried to analyze the health outcomes of the older persons and some of their socio-economic correlates. Three conditions, each with multiple responses, were analyzed: (i) current health of responding old, (ii) changes in relative health conditions over past 12 months, and (iii) number of diseases suffered by the sample old. A multinomial logit (current and relative health and a count data model (number of diseases) were employed to test the hypothesis that the caste, widowhood and public health measures are among important contributory factors along with age, sex, education, economic status, per capita monthly consumption expenditure, etc. Our results very strongly supported the hypothesis and also signified the relevance of social quality that is now increasingly measured by taking the factors chosen for this analysis into consideration.

These results obviously a pointer of high rural poverty, lack of social inclusion and considerable disease prevalence as an outcome of these malice. This would, on the one hand, require sustained corrective measures both by improving the rural economy through appropriate investment efforts and, creation of elderly care infrastructure on the other. Currently, state provided health care infrastructure is mostly directed to the reproductive health. Geriatric care, creation of institutional mechanism for the aged, and finding ways to finance some of these activities – especially in rural areas - appear to be completely outside the ambit of policy makers. Similarly, the idea of social quality as different from the individualized welfare concept is also lacks attention.

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