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Ageing, Socio-economic Disparities and Health Outcomes: Some Evidence from Rural India

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On the basis of the Census 2001, and the unit level data on self-reported health from the NSS 52nd and 60th Rounds, this study examines the following: (i) inter-state variations in the age–sex distribution of the rural aged by three broad social groups, (ii) level of their per capita monthly consumption expenditure to gauge changes in their economic conditions over the preceding two NSS rounds, (iii) their health conditions cross-classified by the observed age categories and social groups, and (iv) socio-economic correlates of old age health—both current and relative. In order to avoid comparability problems between the 52nd and 60th Rounds, a health analysis was made for the latter period alone. A few notable observations of the study are: (i) ageing in India is a widely spread phenomenon and, therefore, an issue of serious income and health security considerations, (ii) almost in every state, the aged are concentrated in rural areas and need to be weighed accordingly in formulations of old age policies, (iii) feminization of ageing, widowhood and rapid growth of the older old are emerging issues for researchers, service providers, insurers, 50+ market analysts, and (iv) later life health is most likely an outcome of socio-economic conditions of the aged including their access to public health facilities. An important value addition of this article is its explicit focus on rural ageing that has so far been given limited attention in recent economic literature on ageing in India.

INTRODUCTION

With a sustained decline in fertility and growth in survival chances, India is likely to face many new challenges in the realm of its population management strategies, especially those relating to human life quality and its major socio-economic determinants. Some of the recent economic literature in India has, however, clearly indicated a growing strain on many of the factors affecting the quality of human life and its determinants. A large part of this literature and data sources also highlight growing disparities and the emerging mismatch between the rising GDP growth in the country and the quality of life experienced by large segments of its disadvantaged population groups (Dev and Ravi, 2007; UNICEF, 2005; NSS 61st Round, July 2004-June 2005). Besides millions of malnourished and ill-educated children (Citizens' Initiative for the Rights of Children Under Six, 2006; UNICEF, 2005; PROBE, 1999; Dreze and Murthy, 2001) or socially marginalized widows (Chen and Dreze, 1995),[1] a notable fraction of this population group also comprises older men and women—defined as those aged 60 years and above. A sizeable number of them have remained largely deprived because of their inadequate past and cumulative burden of poor socio-economic attributes, chronic ailments and lack of functional autonomy (Alam and Mukherjee, 2005; Albert,

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Alam and Nizamuddin, 2005; Gupta and Sankar, 2002; Rajan, 2007). The following dimensions also work to aggravate many of their difficulties:

- Most of the elders in India reside in rural areas without any significant public support or conducive socio-economic environment; and
- Rural ageing and its issues have not only failed to draw public attention, but have also remained dormant issues for many of the mainstream economists and social scientists.

Obviously, a situation like this is expected to raise many serious issues in the coming years and, therefore, needs to be addressed through a detailed situational assessment of the rural aged including their size, age-sex distribution, some of their important socio-economic attributes, disparities, and the extent to which these disparities could endanger their health in later life.[2] Unfortunately, however, there appear to be negligible or very limited attempts in this direction.

Against some of these broader concerns, the rest of this analysis is basically an attempt to examine issues that would help to draw inferences about the conditions of the rural aged in India, and also to make some assessments about their share in the country's recent economic upsurge. To be more precise, this study encompasses the following:

- Distribution of the rural aged by two broad age categories (old and older old),[3] gender and three well-documented social groups [Scheduled Castes (SCs), Scheduled Tribes (STs) and the rest or others] in 15 major states covering most of the country and its old population. In addition, attempts are also made to highlight the level of poverty and consumption disparities suffered by the old—both in real and nominal prices.
- Self-reported health conditions of the rural elders including those suffering from no, single or multiple ailments;[4] and finally,
- Some important socio-economic correlates of old age health

This article is organized as follows: Section 2 presents a distribution of the rural aged by states, social groups, age-sex distribution, overtime changes in the per capita monthly consumption expenditure (PCMCE), etc. These details basically serve to highlight the fact that the aged in India are predominantly rural, unevenly distributed across various states, and a large majority of them are still economically backward with low levels of consumption. This discussion may also help us to infer that their share in globalization goodies remains almost negligible. Attempts will also be made in this section to distribute the aged into two age groups, identifying states with more of the older old (that is, those who are in the 75+ or 80+ age group) and, hence with a potential to face greater health risks in the coming days. Besides, these older old may as well fall below the threshold level of the physical abilities required to become functionally independent. As rural India has no long-term care provisioning except those provided informally by the family networks, the aged with no family support may face serious difficulties in their basic activities of daily living (BADL). Section 3 describes the current and the relative health statuses of the older persons

according to their age, sex and social affiliations. These are in addition to a discussion on those suffering from single or multiple diseases. The socio-economic correlates of old age health, an issue with a limited analytical concern, are examined in Section 4. A multinomial logit and a count data model (CDM) are used to derive some tentative inferences. Finally, in Section 5, a few policy options are discussed. Wherever possible, attempts are made to portray these details over two points of time to make temporal comparisons.

Two different data sources are used. The size distribution of the older populations by gender, age and social groups is drawn from the Census data for 2001. As the Indian censuses do not provide household consumption details or old age health, or describe the conditions suffered by individuals, the remainder of this analysis relies on the NSS data (NSS 52nd and 60th Rounds) for the years 1995-96 and 2004. A point of caution about the NSS 52nd and the 60th Rounds is that the former, for instance, was conducted over a period of twelve months (July 1995-June 1996), while the latter was conducted over a period of six months, that is, January-June 2004. Both may, therefore, differ in terms of the sample size and other important characteristics. This fact ought not to be ignored while the results are being compared.

RURAL AGED: SIZE, AGE-SEX COMPOSITION AND SOCIAL GROUPS

Distribution of Older Men and Women by States

As was noted earlier, the details presented in this section are mostly based on the data made available from the Census 2001 (C-Tables, electronic version).

Using data from the Census 2001, Table 1 provides a rural-urban distribution of the ageing populations, both at the all-India level and by 15 major states.[5] Three interesting observations follow from this table, and one of them relates to the inter-state variation in the size distribution of the elderly population. We notice that the share of the aged in most states exceeds the all-India level. This is particularly true for states like Kerala, Himachal Pradesh, Maharashtra, Punjab and Tamil Nadu. Another point to be noted from this table is the feminization of ageing as elderly women outnumber men in almost every state except Bihar. The third interesting point to be noted from this table is the high rural base of the ageing population in India, especially in Himachal Pradesh, Bihar, Maharashtra, Orissa, Uttar Pradesh, and Rajasthan. This underlines the fact that rural ageing, which has hitherto remained a dormant issue in India, needs to take precedence in policy formulations, especially in the creation of rural healthcare facilities.

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

Who is actually an aged person and what should be the criteria to deal with this question? There has been a growing debate in India and many other developing countries on this issue, especially when a cut-off entitlement age for public transfers and subsidies needs to be decided. While there is no major consensus on this question as

Table 1
Ageing in India: Shares of Aged by Sex and Place pf Residence: 2001

(Percentage)

All India and Major Selected States	*Distribution of Persons Aged 60 Years and Above*							
	Aged by Place of Residence: (Share in Total Pop.)		*Aged by Sex: Share in Total Pop.)*		*Sex-wise Distribution of Rural Aged*		*Sex-wise Distribution of Urban Aged*	
	Rural	*Urban*	*Male*	*Femal*	*Male*	*Female*	*Male*	*Female*
1. Andhra Pradesh	8.1	6.2	7.2	8.1	78.0	77.7	22.0	22.3
2. Bihar*	6.7	6.2	6.8	6.5	90.4	90.2	9.6	9.8
3. Gujarat	7.3	6.2	6.2	7.7	65.8	66.7	34.2	33.4
4. Haryana	7.9	6.4	7.0	8.1	75.6	74.9	24.4	25.2
5. Himachal Pradesh	9.3	6.3	8.8	9.3	92.8	93.6	7.2	6.4
6. Karnataka	8.3	6.5	7.2	8.3	70.7	71.5	29.3	28.5
7. Kerala	10.5	10.4	9.6	11.3	74.8	73.9	25.2	26.1
8. Madhya Pradesh**	7.4	6.4	6.7	7.6	76.5	76.1	23.5	23.9
9. Maharashtra	10.2	6.7	7.8	9.7	66.8	68.1	33.2	31.9
10. Orissa	8.6	6.4	8.1	8.5	88.0	88.7	12.0	11.3
11. Punjab	9.8	7.4	8.6	9.5	72.5	71.8	27.5	28.2
12. Rajasthan	7.0	6.0	6.3	7.4	79.3	79.5	20.7	20.6
13. Tamil Nadu	9.2	8.3	8.8	9.0	59.1	58.0	40.9	42.0
14. Uttar Pradesh#	7.3	5.9	7.1	7.0	83.0	82.1	17.0	17.9
15. West Bengal	6.6	8.4	6.7	7.5	65.2	68.4	34.8	31.7
All India	7.7	6.7	7.1	7.9	75.1	74.9	24.9	25.1

Note: * Excluding Jharkhand. ** Excluding Chhattisgarh. # Excluding Uttarakhand.
Source: 2001 Census, online data: http://www.censusindia.net.

different agencies view it differently, the UN follows a cut-off age for most developing countries at 60 years. This article, therefore, uses the UN norm, though the shares of the 65+ and other older old categories have also been provided for cross-country comparisons.

Table 2 gives the distribution of the rural old in terms of four broad age categories namely, 60+, 65+, 75+, and 80+—wherein the last two are considered as the older old and an increase in these age categories is considered as being fraught with greater stress on care institutions, particularly on 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.

The age distribution of the older persons in Table 2(a), panels (i) to (iv), yields a couple of interesting revelations. One is the fact that ageing is markedly pronounced among the higher social groupings comprising the non-SC/ST populations. As compared with the SC/ST, Table 2(a), panel (iv) reveals that the share of the aged in the 'Others' category is significantly higher in all the age brackets, indicating that

many of the lower caste people do not survive for a span much longer than the people of higher social groups. This underlines the need for further scrutiny of the ageing processes experienced by the lower caste stratums.

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

(Percentage)

Age Groups	*Aged in Total Population*			*Rural Aged*		
	Total (M+F)	*Males*	*Female*	*Total*	*Males*	*Female*
			Panel: 2a (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: 2a (ii)—Scheduled Castes (SCs)			
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: 2a (iii)—Scheduled Tribes (STs)			
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: 2a (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, online data: http://www.censusindia.net.

Another significant point that emerges from Table 2 pertains to 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 the fact that this phenomenon is more or less universal and particularly occurs in most of the developed world, data from Table 2(a) draws attention to the primacy of women survivors even among the lower social groups [see panels (ii) and (iii)]. Currently, the issue as to why men are more likely than women to suffer an early death is under investigation in many developed countries. Another related question in this context is whether there is a biological determinant for the reason why men die earlier than women. Is it that men's health in many countries gets short shrift as more of them die of just about each one of the leading causes of death at younger ages than women? Regardless of whether or not this growing debate is relevant to Indian conditions wherein ageing and poverty go hand in hand, this pattern raises many difficult questions about the income and health security requirements of widows and

the disabled, especially those living in rural areas and up to ripe ages of 80 years and more.

Table 2(b) reconfirms the all-India pattern and indicates significant and widespread ageing in the rural areas of most major states. Further, people in the 80+ category and higher age groups have grown more visible in many major states like Kerala, Punjab, Himachal Pradesh, Maharashtra, and Karnataka. These statistics also reiterate a longevity tilt in favour of women with a few exceptions seen in states like Uttar Pradesh, 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 the 80+ age category (Table 2b).

Besides the feminization of rural ageing and the higher visibility of the older old in the 80+ age groups, Table 2(b) also brings out the inter-state differentials in graying as the share of the elderly population in many states exceeds the national average, underscoring the need for these states to pursue the issues of ageing and old age health more vigorously. A few of these states like Kerala, Punjab and Maharashtra are particularly graying fast and have more than one-tenth of their rural women in the 60+ age bracket. States with elders exceeding the national average are many more in number and include the whole of the southern region, and parts of the western, northern and eastern regions of the country. States with ageing populations that are less than the national average are few in number and are largely confined to the Hindi-

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

(Percentage)

All India and Major States	*60+*		*65+*		*80+*	
	Male	*Female*	*Male*	*Female*	*Male*	*Female*
Andhra Pradesh	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
Himachal Pradesh	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
Madhya Pradesh**	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
Tamil Nadu	9.22	9.24	5.78	5.72	0.91	0.88
Uttar Pradesh#	7.41	7.20	4.70	4.52	0.84	0.75
West 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

Note: * Excluding Jharkhand. ** Excluding Chhattisgarh. # Excluding Uttarakhand.

Source: 2001 Census, on line data: http://www.censusindia.net.

speaking belt of Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh. West Bengal is the only non-Hindi state wherein the size of the elderly population falls below the national average. Gujarat is another non-Hindi state that falls short of the national average if judged only on the basis of the number of elderly males (Table 2b).

Distribution of Rural Aged by Broad Social Groups

In order to provide a context for the security requirements of the rural aged, it may be helpful to distribute the older population into three broad social groups, namely, the Scheduled Castes (SCs), the Scheduled Tribes (STs), and the rest (or Others). Three issues lie at the centre of this distribution. One is an assessment of the ageing differential across different social groups. The remaining two issues follow from the first and may have an important bearing on support provisioning both by the families and the governments. To be more precise, ageing among the lower castes (that is, among SCs/STs) may mean greater reliance on resource transfers, particularly the transfers made by the governments, as most of these aged are likely to be more deficient in terms of every measure of socio-economic well-being. The aged among the higher castes, on the other hand, may be relatively better-off and a fraction of them may be able to manage their sustenance 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.

The distribution of older men and women by three broad social groups (SC, ST and Others) is shown in Tables 3(a) to 3(c). These details are given by using three

Table 3(a)
Share of Scheduled Caste (SC) Old in Total Population—Rural, 2001

(Percentage)

All India and Major States	*60+*		*65+*		*80+*	
	Male	*Female*	*Male*	*Female*	*Male*	*Female*
Andhra Pradesh	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
Himachal Pradesh	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
Madhya Pradesh**	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
Tamil Nadu	7.55	7.25	4.42	4.17	0.63	0.58
Uttar Pradesh#	6.90	6.98	4.19	4.23	0.67	0.64
West 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

Note: * Excluding Jharkhand. ** Excluding Chhattisgarh. # Excluding Uttarakhand.

Source: 2001 Census, online data: http://www.censusindia.net.

broad age bands: 60+, 65+ and 80+ age categories. Several interesting observations follow from these details.

First, regardless of the age categories or gender, the share of older persons is relatively higher in the 'Others' category than the rest. This turns out to be true in almost every observed state. Second, between the SCs and STs, ageing appears to be higher in the former [as can be seen in Tables 3(a) and 3(b)]. And finally, older women outnumber the men in all the three social groups, implying that women in the coming years would turn out to be the bigger claimants of security provisioning in the country.

Table 3(b)
Share of Scheduled Tribe (ST) Old in Total Population, Rural–2001

(Percentage)

All India and Major States	*60+*		*65+*		*80+*	
	Male	*Female*	*Male*	*Female*	*Male*	*Female*
Andhra Pradesh	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	-	-	-	-	-	-
Himachal Pradesh	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
Madhya Pradesh**	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
Tamil Nadu	6.74	6.41	3.89	3.66	0.61	0.50
Uttar Pradesh#	5.91	5.43	3.66	3.45	0.68	0.58
West 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

Note: * Excluding Jharkhand. ** Excluding Chhattisgarh. # Excluding Uttarakhand.

Source: 2001 Census, on line data: http://www.censusindia.net.

This may be particularly true for states like Kerala, Punjab, Maharashtra, Tamil Nadu, and Himachal Pradesh. Given the lower bargaining strength of women (Agarwal, 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 negligible infrastructure for old age care in rural areas, deceleration in higher productivity employment and growing casualization of the rural labour market (NSS 60th Round, Report No. 506), familial transfers may not suffice in many cases to meet the burden of old age dependencies (Alam and Karim, 2006). This is more likely to happen with the low-income and socially underprivileged families, especially if they

Table 3(c)
Share of Non Scheduled Caste (SC), Scheduled Tribal (ST) in India and Major States, Rural-2001

(Percentage)

All India and Major States	*60+*		*65+*		*80+*	
	Male	*Female*	*Male*	*Female*	*Male*	*Female*
Andhra Pradesh	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
Himachal Pradesh	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
Madhya Pradesh**	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
Tamil Nadu	9.85	9.98	6.25	6.26	0.37	0.45
Uttar Pradesh#	7.61	7.30	4.85	4.61	1.00	0.86
West 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

Note: * Excluding Jharkhand. ** Excluding Chhattisgarh. # Excluding Uttarakhand.

Source: 2001 Census, online data: http://www.censusindia.net.

Table 3(d)
Dependency Burden on 15-59 Year-old Population by Social Groups: 2001
Number of 0-14 and 60+ per 100 Persons in 15-59 Age Group: Rural

(Percentage)

	Total (All Groups)		*Non-SC/ST (Others)*		*SC*		*ST*	
	Young+Old	*Old*	*Young+Old*	*Old*	*Young+Old*	*Old*	*Young+Old*	*Old*
Andhra Pradesh	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	–	–
Himachal Pradesh	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
Madhya Pradesh**	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
Tamil Nadu	59.78	14.81	58.91	15.76	62.23	12.06	64.80	10.90
Uttar Pradesh#	98.21	14.55	96.99	14.70	102.29	14.09	100.94	11.44
West 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

Note: * Excluding Jharkhand, ** Excluding Chhattisgarh and # Excluding Uttrakhand.

Source: Calculated on the basis of the 2001 Census figures, online data: http://www.censusindia.net.

also have to endure the young age dependencies. Cross-classification of the total (that is, combined 0-14 and 60+ age categories) and old age (60+ category) dependencies in Table 3(d) by three social groups lends some credence to these arguments. This table clearly suggests a high support burden on members of the working age group. It further indicates that the backward social groups like the SCs and STs are burdened considerably more if judged on the basis of their total dependencies. Others, likely to be socially more advanced, however, exceed the SC/ST groups in terms of old age dependencies.

Old Age Poverty: Some Tentative Inferences

At the conceptual level, poverty is often defined as a socially perceived deprivation with respect to the basic minimum human needs. Economists have often perceived the issue of basic minimum human needs as the 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

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

(Indian Rupees)

All India and States	*MPCE: 52nd Round (July 1995-June 1996)*			*MPCE: 60th Round (January-June 2004)*		
	MPCE (Nominal)		*CPI (AL) Adjusted MPCE (1986-87=100)*	*MPCE (Nominal)*		*CPI (AL) Adjusted MPCE (1986-87=100)*
	Rs.	*CV*		*Rs.*	*CV*	
Andhra Pradesh	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 Pradesh	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 Pradesh	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 Pradesh	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

Notes: CPI (AL) refers to the consumer price index for agricultural workers and has been obtained from Economic Survey, 2003-04 and 2004-05. Bihar, Madhya Pradesh and Uttar Pradesh are inclusive of Jharkhand, Chhattisgarh and Uttarakhand, respectively, and are, therefore, comparable over both the points of time.

Source: NSS 52nd (July 1995–June 1996) and 60th Rounds (January–June 2004).

taking into consideration some important basic differences among individuals. For example, it may be possible that age differentials would change the basic minimum requirements of people—the basic needs of the young may largely differ from those of the old. This tends to raise a significant question: can old age poverty really be judged on the basis of the generalized calorific norms? Unfortunately, the ongoing poverty debate in India rages far from these considerations and solely relies on a predetermined level of basic minimum food requirements, applied universally across all ages. Any estimation of the age-specific poverty level is, therefore, ruled out. As a compromise, we computed for the study the per capita monthly consumption expenditure (PCMCE) of households with elderly co-residents for the years 1995-96 and 2004.[6] 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 levels, 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), using 1986-87 as the base (Economic Surveys, 2003-04 and 2004-05, Table 5.3).

Table 4(a) presents both the real and the nominal per capita consumption expenditures of rural households over two NSS rounds—that is, July 1995-June 1996, and January-June 2006.[7] Besides exhibiting considerable disparities in the consumption level, this table also underlines 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 with the co-residing old. This is clearly highlighted by all the fifteen states under consideration, but more strikingly in the case of Orissa, Uttar Pradesh, Maharashtra, West Bengal, and Bihar. In most of these states, the daily consumption expenditure of a large number of individuals is below the half-a-dollar mark (see Table 4a).

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

The third observation stems from price-adjusted consumption levels. While there has been some increase in the households' real consumption expenditure in most of the states under study, there are three contrasting states wherein it has declined over

time—namely, Kerala, Maharashtra and Orissa. A maximum decline was registered in Kerala.

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

The preceding results raise strong possibilities of major differentials in the levels of consumption expenditure by households drawn from different social groups. Likewise, some other questions may also be raised such as: how does the real per capita consumption expenditure of lower caste households compare over time? Or, what has happened to the ST households over these years? Similarly, between the SCs and STs, which one is doing better? What about the consumption inequalities of households separated by different social groups? In response to some of these questions, we tried to rework Table 4 (a) by three caste classifications. Table 4 (b) provides the PCMCE for the SC households followed by two more tables with similar details for the STs and the 'Others'.

Several interesting results follow from those tables. One is the fact that the real per capita consumption expenditure of SC households has grown marginally during the years 1995-96 and 2004 in most of the states barring Maharashtra, Madhya Pradesh and Orissa, with Maharashtra being at the top. The same has also been found to be

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: 52nd Round (July 1995-June 1996)*			*MPCE: 60th Round (January-June 2004)*		
	MPCE (Nominal)		*CPI (AL)*	*MPCE (Nominal)*		*CPI (AL)*
	Rs.	*CV*	*Adjusted MPCE (1986-87=100)*	*Rs.*	*CV*	*Adjusted MPCE (1986-87=100)*
Andhra Pradesh	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 Pradesh	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 Pradesh	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 Pradesh	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

Note: As in Table 4(a).

Source: NSS 52nd Round (July 1995–June 1996) and 60th Round (January–June 2004), Household Data.

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: 52nd Round (July 1995-June 1996)*			*MPCE: 60th Round (January-June 2004)*		
	MPCE (Nominal)		*CPI (AL) Adjusted MPCE (1986-87=100)*	*MPCE (Nominal)*		*CPI (AL) Adjusted MPCE (1986-87=100)*
	Rs.	*CV*		*Rs.*	*CV*	
Andhra Pradesh	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 Pradesh	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 Pradesh	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

Note: As in Table 4(a).
No ST respondent was reported in Haryana and Punjab.

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

true for the tribal households in Orissa, and for the 'Others' category in both Orissa and Madhya Pradesh.

Regarding variations in the per capita household consumption expenditure within states or at the all-India level, we notice that this phenomenon remains stronger for the tribal households followed by the 'Others'. It has also been seen to grow over time. In the case of tribal households, for example, the all-India coefficient of variation has risen from 52.2 in 1995-96 to 92.3 in 2004, implying growing consumption inequalities among them over these years. It, however, presents a mixed situation at the state level. States like Haryana, Gujarat, Maharashtra and Karnataka, for instance, have shown over time a decline in their CVs, while the 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. Also, this is true over both the years. The only exception is the state of Himachal Pradesh where the STs had an edge. And yet, none of these groups has, on an average, been able to reach the one dollar-a-day benchmark.

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

(Indian Rupees)

All India and States	*MPCE: 52nd Round (July 1995-June 1996)*			*MPCE: 60th Round (Jan.-June 2004)*		
	MPCE (Nominal)		*CPI (AL)*	*MPCE (Nominal)*		*CPI (AL)*
	Rs.	*CV*	*Adjusted MPCE (1986-87=100)*	*Rs.*	*CV*	*Adjusted MPCE (1986-87=100)*
Andhra Pradesh.	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 Pradesh	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 Pradesh	346.81	49.12	143.93	470.12	104.35	137.93
Maharashtra	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 Pradesh	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

Notes: As in Table 4 (a).

Source: NSS 52nd Round (July 1995–June 1996), and 60th Round (January–June 2004), Household Data.

As a whole, these results clearly reveal the pathetic condition 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 either create a sustainable society for themselves or contribute towards the creation of such a society for the next generation? These are some of the questions that remain unanswered here.

HEALTH CONDITIONS OF THE RURAL OLD

The paltry sum of money available to average rural households in most states for their consumption requirements speaks volumes. Another dimension of this entire issue relates to the recent decline in the utilization of public health services, often due to quality considerations. Some of the recent studies on health clearly suggest growing out-of-pocket expenses by households, forcing many of them to face indebtedness and penury (National Macroeconomic and Health Commission Report, 2005). Against this backdrop, it may be of some use to evaluate the health conditions of older persons in

15 major states under consideration. Two exercises are reported below, each using the NSS 60th Round for rural households.[8] One relates to the self-assessed health conditions of the older men and women. And the second provides a bivariate distribution of persons who have suffered 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, that is, the 60-74 and 75+ age categories.[9] At least three policy inferences may be drawn from these exercises. The first indicates a case for streamlining the rural healthcare facilities, especially in areas where old age morbidity is higher with higher percentages of the morbid old. The second inference may seek to initiate measures for geriatric support provisioning in the country. With large percentages of the ailing sick and physically disabled aged, there would be a risk of growing unmet dependencies in the activities of daily living (ADL). A third inference may serve as a pointer to the fact that the issue of old age health cannot be tackled without a focus on the later life as a major public health issue.

Current and Relative Health Conditions: Self-assessments by the Rural Aged

Respondents were asked two questions to make assessments about their 'current (that is, at the time of the survey)' and 'relative (that is, as compared to the last year)' health conditions. These are: (i) rate your current health status by opting any one from *'very good'*, *'good'*, and *'bad'*, and (ii) as compared to the last year, do you consider your current health status as *'much better'*, *'nearly the same'*, or *'worse'*?[10] The last option in both the questions indicated the poorest health condition.

Table 5(a)
Rural Aged Reporting Poor Health Conditions
NSS 60th Round

Major States and All India	*Social Groups (%)*			
	All Social Groups	*ST*	*SC*	*Others*
Andhra Pradesh	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 Pradesh	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 Pradesh	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 Pradesh	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).

Table 5(a) gives an idea about the reported health conditions of the older adults. This table clearly suggests that a large percentage of the rural old do not feel satisfied with their current health conditions. This percentage, though somewhat moderate at the all-India level (that is, over 24 per cent), reaches as high as 40 per cent in Kerala, 38.5 per cent in West Bengal, 30.5 per cent in Orissa, and around 26 per cent in Uttar Pradesh and Bihar. There also appear to be high variations both across the states and social groups. The SCs seem to be the worst sufferers in many states (Table 5a).

The age-sex break-up of the self-reportedly poor health conditions of the aged is given in Table 5(b). This table clearly exhibits a sizeable gender gap in the perceived health conditions of the elderly respondents. The table shows that more women consider themselves as frail or in poor health conditions than their male counterparts. Despite inter-state variations, this trend can be noticed for most of the states except Haryana where the reverse is true.

The problem increases further with the 'older old'. Table 5(b) reveals that more than half these people report themselves in poor health in this age group in the states of Kerala, Orissa, and West Bengal. At the national level, two out of every five older old people consider themselves to be health-deficient or not enjoying good health.

Table 5(b)
Age-Sex Distribution of Rural Aged Reporting Poor Health
NSS 60th Round

Major States and All India	*Responses by Gender and Age Distributions (%)*			
	Gender		*Age Groups (Years)*	
	Male	*Female*	*60 – 74*	*75+*
Andhra Pradesh	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 Pradesh	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 Pradesh	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 Pradesh	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).

The relative health conditions of the elderly respondents—that is, health comparisons over two points of time—are shown in Table 6(a). Two notable

observations follow from this table. One, the old members among the tribals are not as prone to declining health conditions as those from the other two social groups. This can particularly be noticed for states like Madhya Pradesh, Bihar, Karnataka, and Tamil Nadu. Two, the size of the elderly respondents suffering a deterioration in health conditions over the past one year is considerably large and, if this trend is allowed to persist, a significant proportion of this population may not only face senescence, but may as well fall below the physical threshold level necessary for functional competence. As most of the rural areas in the country do not have even the rudimentary infrastructure to provide necessary care for the functionally disabled, this can be an alarming situation in view of the growing number of households with co-residing olds.

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

Major States and All India	*Social Groups (%)*			
	All Social Groups	*ST*	*SC*	*Others*
Andhra Pradesh	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 Pradesh	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 Pradesh	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 Pradesh	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).

Table 6 (b), which follows exactly the pattern used in Table 6(a), reinforces a number of earlier observations and shows that a worsening of the relative health conditions are reported more frequently by women than men, and also by people in the older old age category. In a policy perspective, it underpins the need for streamlining the rural healthcare infrastructure in states where more of the aged are facing failing health conditions. These states include Kerala, Orissa, Uttar Pradesh, West Bengal, Haryana and Bihar.

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

Major States and All India	*Sex (%)*		*Age Groups (%)*	
	Male	*Female*	*60-74*	*75+*
Andhra Pradesh	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 Pradesh	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 Pradesh	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 Pradesh	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).

Distribution of the Aged by Single and Multiple Diseases/Disabilities

The data on ailments and disabilities in the NSS 60th Round included the following:

- Cases of visual, hearing, speech, loco motor and mental losses or disabilities,
- Physical damages of all types as a result of accidents or injuries such as cuts, wounds, haemorrhage, 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.

Table 7(a) cross-classifies the aged into 'sick' and 'non-sick' categories in all the states under consideration. The sick are further distributed into 'single' and 'multiple' ailments in order to re-emphasize the earlier contention suggesting a need for the creation of the requisite healthcare services in rural areas, especially in states where health issues pertaining to old age are more pronounced.

As regards Table 7(a), it may be noticed that some of the results in this table do not conform to our expectations. This table, for example, reveals that the share of the aged from the high castes suffering from single or multiple diseases is markedly higher than those from the remaining two social groups. This result may be noticed in more than two-thirds of the observed states. The same is reflected at the all-India level as well—the morbid 'Others' at the all-India level turns out to be 39 per cent as against 36 per cent for the SCs, and merely 26 per cent for the STs.

Table 7(a)
Rural Aged with and without Ailments/Disabilities by Observed Social Groups: NSS 60th Round

	Disease Prevalence by Social Groups (%)											
	All Social Groups			*STs*			*SCs*			*Others (Non-SC/ST)*		
	None	*Single*	*Multiple*	*None*	*Single*	*Multiple*	*None*	*Single*	*Multiple*	*None*	*Single*	*Multiple*
Andhra Pradesh	56.9	34.2	8.9	65.8	25.4	8.8	58.3	36.3	5.4	55.8	34.2	10.0
Bihar	69.1	23.9	7.0	81.6	9.9	8.5	75.1	19.3	5.5	67.6	25.1	7.3
Gujarat	62.9	30.8	6.3	69.6	22.4	8.0	50.4	38.3	11.3	63.5	31.5	5.1
Haryana	72.7	20.8	6.5	0.0	0.0	0.0	76.3	18.2	5.5	71.6	21.6	6.9
Himachal Pradesh	65.3	27.4	7.3	67.7	30.6	1.7	70.9	25.7	3.4	63.0	28.0	9.1
Karnataka	67.1	27.4	5.5	72.4	25.9	1.7	62.9	33.7	3.3	67.4	26.3	6.3
Kerala	40.4	41.6	17.9	33.2	25.5	41.3	48.6	33.5	17.8	39.5	42.8	17.7
Madhya Pradesh	68.8	24.2	7.0	77.2	13.7	9.1	72.8	25.1	2.2	64.7	27.6	7.6
Maharashtra	58.8	32.2	8.9	60.5	32.7	6.8	71.6	22.9	5.5	56.1	34.0	9.8
Orissa	75.6	18.5	5.9	82.2	13.9	3.9	75.2	18.5	6.3	73.3	20.2	6.5
Punjab	57.5	33.8	8.7	0.0	0.0	0.0	59.9	31.9	8.2	56.2	34.9	8.9
Rajasthan	76.5	19.1	4.4	87.2	11.7	1.1	79.0	18.0	3.0	74.0	20.7	5.4
Tamil Nadu	73.2	23.5	3.3	99.3	0.7	0.0	77.1	18.8	4.1	71.4	25.5	3.1
Uttar Pradesh	59.6	33.2	7.2	92.8	6.0	1.2	57.5	34.4	8.0	59.9	33.1	7.0
West Bengal	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).

The results derived in Table 7(a) raise an obvious question: would it be plausible to accept the observations made in this table? If so, would this imply that the tribals and many elderly people from the low castes in India are healthier than their counterparts from the high castes, and that the caste affiliation of individuals is unlikely (or less likely) to affect their health outcomes in the later years of the life span? Another question may arise from the differences in the size of the category comprising older persons who report sick in various states. The answer to the first question—that is, the number of morbid SCs/STs vs. the number of morbid upper castes or others—is perhaps related to the issue of awareness among the respondents. It may as well be difficult for many of the older respondents in the lower caste category to ascertain their own health or morbidity statuses, resulting in their ignorance about any disease afflicting them.[11] The low magnitude of sickness reported in states like Orissa, Tamil Nadu, Haryana or Rajasthan may have partly been the result of a misunderstanding of health-related issues and partly due to the lack of awareness about self-health among the illiterates and less informed respondents.[12]

A comparison of the health conditions reported by the low castes and tribals is also rendered difficult by the fact that in many states, the share of the ageing sick belonging to tribal communities remains lesser than the number of their SC counterparts

(Table 7a). This may particularly be noticed in the states of Andhra Pradesh, Gujarat, Karnataka, Madhya Pradesh, Orissa, Punjab, Uttar Pradesh, and Tamil Nadu.

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*
Andhra Pradesh.	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 Pradesh	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 Pradesh	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
Tamil Nadu	70.1	25.6	4.4	71.6	24.6	3.8
Uttar Pradesh	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).

Considering that the tribals are also largely poor and under-privileged, a sickness gap of this magnitude between them and the SCs necessitates further investigations. A similar observation can be made given the very low percentages of older adults reporting multiple diseases in a number of states such as Tamil Nadu, Rajasthan, Gujarat, Bihar and Orissa.

The age-sex distribution of the aged reporting sick on the date of survey is provided in Tables 7(b) and 7(c), respectively. While most of these responses are along expected lines, two observations need further consideration. First, the elderly women have been found to be more morbid and in much worse health conditions than their male counterparts. This is largely true for all the states except Tamil Nadu. It justifies some of our earlier apprehensions suggesting a stronger gender dimension of ageing in India with a larger fraction of women being in poor health conditions. Second, the physical age of individuals is apparently an important determinant of later life diseases in almost every state. This is clear by the size of the older old category suffering either from single or multiple diseases in almost every state under consideration. Obviously, many of these states may need to devise financial means and create infrastructure to meet the growing medical and long-term care requirements of their rural old, specially the older old.

Table 7(c)
Aged with and without Ailments/Disabilities by Broad Age Groups: NSS 60th Round

India and Major States	*Number of Ailment/s: 60-74 (%)*			*Number of Ailment/s: 75+ (%)*		
	None	*Single*	*Multiple*	*None*	*Single*	*Multiple*
Andhra Pradesh	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 Pradesh	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 Pradesh	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 Pradesh	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).

SOCIO-ECONOMIC DISPARITIES AND HEALTH OUTCOMES

A growing body of literature now already exists to underline the role of socio-economic statuses (SES) in determining the post-50 health outcomes of individuals (Crimmins and Seeman, 2004; Seeman and Crimmins, 2001). Much of this literature has, however, been directed at the developed countries (Smith, 2004; Smith, 1999). In the developing countries of this region, and particularly in India, a few recent attempts made in this direction have largely been in the realm of child-bearing practices and the reproductive health of women from different socio-economic stratums (Ranjan and Stones, 2004; DFID, 2003). An analysis of how these factors affect the health of the older adults in their later lives is still in its nascent stage (Gupta and Sankar, 2002; Alam, 2004; Alam and Mukherjee, 2005, etc).

Following the hypothesis used in the SES literature, the rest of this analysis is an attempt to present a few exercises exploring the effects of certain socio-economic factors on the health outcomes of the rural aged.[13] Two different estimation models were used to carry out these exercises: the first, a multinomial logit, intended to examine the socio-economic risk factors in the current and relative health outcomes of the rural aged; and the second was designed on the basis of a count data model (CDM) to examine the socio-economic risk factors in multiple (including collateral) ailments.

Box 1
Multinomial Logit and CDM Regressions: Explained and Explanatory Variables
Data Source: NSS 60th Round (Household Data)

Estimations	*Explained Variables*	*Explanatory Variables (Xi)*
1. Multinomial Logit 2. Count Data Model/ Risk Ratios (IRR): (Negative Binomial Regression)	1. Current Health Status: Health condition at the time of the survey (a) Excellent (b) Good/Fair (c) Poor 2. Relative Health Status: Now and 12 months before (a) Good (b) Almost the same (c) Worse Hausman (1978) Test for independence of irrelevant attributes (IIA) is applied. 3. Count of Diseases: (a) No disease (b) Single disease (c) Multiple diseases	1. Categorical dSoclgr: social group; ST = 1, SC = 2, Others = 3 dEducation = education level; illiterate = 1; up to primary level education = 2, up to 10^{th} = 3, up to higher secondary & diploma = 4, graduate and above = 5 dTpdrain = type of drainage: open *kutcha* = 1, open *pucca* = 2, covered *pucca* = 3, underground = 4, no drainage = 5. 2. Continuous $\log_e$_MPCE = log of households' per capita monthly consumption expenditure 3. Binary dSex: Male = 1; Female = 0 dAge: 75+ = 1, < 75 = 0 dStatecoind: economic dependence dummy; Independent = 1, Others = 0 dWidow: widow = 1, Others = 0

Box 1 explains the sets of both the explained and explanatory variables chosen to estimate the two models. The explanatory variables were chosen after using several alternative specifications as they turn out to hold in several cases a robust and sensible relationship. The three results (relating to current health, relative health, and the count of diseases) are presented in Tables 8(a) to 8(c).

As a whole, a scrutiny of these results strongly suggests the need to imbibe the principles of social quality more closely with further improvements in the socio-economic condition of the average people, particularly the old. To be more precise, the results in Tables 8(a) and 8(b) clearly indicate that the socio-economic conditions of the aged may or may not help them in bringing about any major health advantages, but these attributes are definitely very critical in exposing them to serious health risks.

Application of the Hausman Test indicates that outcome 2 vs. outcome 1 is independent of all other alternatives.

Table 8(a), which compares the current health of members in the 60+ age group by using those in good health condition as the comparison (or reference) group

Table 8(a)
Multinomial Logit: Effects of Socio-economic Factors on Current Health #
Dependent Variable: Self-reported current health status
Number of Observations: 21, 117

	(2 versus 1)				*(2 versus 3)*			
Socio-economic Attributes	*Coeffi-cients*	*Std. Err.*	*z*	*P>|z|*	*Coeffi-cients*	*Std. Err.*	*z*	*P>|z|*
i. Categorical								
dsoclgr	-0.181*	0.046	-3.900	0.000	0.123*	0.025	4.860	0.000
dEducation	0.137*	0.042	3.270	0.000	-0.027	0.027	-0.980	0.325
dTpdrain	-0.057*	0.019	-3.080	0.001	0.053*	0.010	5.510	0.000
ii. Continuous								
log_MPCE	0.227*	0.070	3.220	0.008	-0.189*	0.036	-5.290	0.000
iii. Binary								
dSex	0.176@	0.077	2.280	0.022	-0.027	0.037	-0.730	0.468
dAge	-0.197**	0.114	-1.730	0.084	0.683*	0.041	16.490	0.000
dStatecoind	0.748*	0.070	10.630	0.000	-0.876*	0.041	-21.370	0.000
dWidow	-0.005	0.079	-0.060	0.953	0.043	0.036	1.190	0.235
Constant	-4.036	0.448	-9.890	0.000	-0.149	0.226	-0.660	0.510

Notes: # Current Health: 1. Excellent. 2. Good or fair. 3. Poor. Outcome 2 (that is, good or fair) is the base outcome.

* Significant at the 1 per cent level. @ Significant at the 5 per cent level. ** Significant at the 10 per cent level.

(see Box 1), reveal that members of the lower castes, the older old, the illiterate, the economically dependent, persons from lower consumption households and those without access to proper drainage facilities are more likely to face poor health outcomes (see Panel A in Table 8a) than those with better socio-economic attributes. In particular, the economic status of the older adults, judged on the basis of their financial dependence or independence, emerges as one of the most robust factors in shaping the health outcomes of the post-60 age group, along with other factors like age, education and social groups. Further, many of these variables work both ways and bear negative or positive signs interchangeably, depending upon the nature of comparisons and the respondents' views about their health (see Panels A and B of Tables 8a and 8b). In some cases, to be precise, these factors contribute significantly to bring about major health gains, while in another, they produce an opposite outcome. To illustrate, the 'social group' as used in our estimating equation negatively affects the prospects of excellent health (Panel A, Table 8a). The same, however, gets altered in Panel B and indicates a worsening in later life health and its prospects (Tables 8a and 8b). In other words, this implies that the lower caste people are more likely to experience a worsening in their health outcomes than their higher caste counterparts. The same is true in the case of a few other human development attributes like education or the economic conditions of individuals.

Table 8(b)
Multinomial Logit: Factors Affecting Changes in Relative Health
Dependent Variable: self-reported relative health status
Number of observations: 21, 109

	(2 versus 1)				*(2 versus 3)*			
Socio-economic Attributes	*Coeffi-cients*	*Std. Err.*	*z*	*P>|z|*	*Coeffi-cients*	*Std. Err.*	*z*	*P>|z|*
i. Categorical								
dsoclgr	-0.110*	0.030	-3.650	0.000	0.091*	0.027	3.410	0.001
dEducation	0.094*	0.030	3.130	0.002	0.025	0.027	0.920	0.360
dTpdrain	-0.016	0.012	-1.310	0.189	0.028*	0.010	2.760	0.006
ii. Continuous								
log_MPCE	0.085**	0.045	1.880	0.060	0.026	0.037	0.700	0.481
iii. Binary								
dSex	0.042	0.048	0.890	0.372	-0.027	0.039	-0.680	0.498
dAge	-0.081	0.064	-1.270	0.205	0.524*	0.044	12.030	0.000
dStatecoind	0.192*	0.045	4.250	0.000	-0.613*	0.042	-14.730	0.000
dWidow	-0.057	0.048	-1.190	0.235	0.074@	0.038	1.920	0.054
Constant	-1.919	0.286	-6.700	0.000	-1.472	0.236	-6.240	0.000

Notes: Relative Health: (1) Excellent compared to last year, (2) Nearly the same as was a year before, and (3) worsened overtime. Outcome 2 (i.e., nearly the same) is the base outcome.

* Significant at the 1 per cent level. @ Significant at the 5 per cent level. ** Significant at the 10 per cent level.

Table 8 (c)
Negative Binomial Regression Results: Risks of Multiple Conditions
Dependent Variable = Number of Diseases
Number of Observations = 21831

	CDM Results				*Incident Risk Ratios (IRR)*[14]			
Socio-economic Attributes	*Coeffi-cients*	*Std. Err.*	*z*	*P>|z|*	*Coeffi-cients*	*Std. Err.*	*z*	*P>|z|*
i. Categorical								
dsoclgr	0.096*	0.016	6.160	0.000	1.101*	0.017	6.160	0.000
dEducation	0.081*	0.015	5.500	0.000	1.085*	0.016	5.500	0.000
dTpdrain	0.013@	0.006	2.290	0.022	1.013@	0.006	2.290	0.022
ii. Continuous								
log_MPCE	0.150*	0.021	7.030	0.000	1.162*	0.025	7.030	0.000
iii. Binary								
dSex	-0.017	0.023	-0.750	0.454	0.983	0.022	-0.750	0.454
dAge	0.253*	0.025	10.220	0.000	1.288*	0.032	10.220	0.000
dStatecoind	-0.395*	0.024	-16.510	0.000	0.673*	0.016	-16.510	0.000
dWidow	0.061*	0.022	2.770	0.006	1.063*	0.021	2.770	0.006
Constant	-2.021	0.137	-14.780	0.000	–	–	–	–

Notes: * Significant at the 1 per cent level. @ Significant at the 5 per cent level.

The socio-economic attributes of rural elders bear significance in their relative health outcomes as well. Table 8(b) compares the overtime changes in the health of

the elderly respondents into the following categories: (i) excellent, (ii) same as last year, and (iii) declined with time; with the second being the comparison group. By and large, these results are completely in tune with the observations made in Table 8(a), and substantiate the fact that declining health prospects are linked with lower caste hierarchies, illiteracy, consumption poverty, widowhood, growing age, and economic dependency. These factors also turn out to significant statistically, and mostly bear expected signs.

The estimates based on the count data model in Table 8(c) also lead to more or less similar inferences and indicate that the elders with a baggage of poor socio-economic attributes, widowhood or birth in lower caste families are more likely to suffer from multiple ailments (diseases or disabilities). A perusal of Table 8(c) indicates that the SCs/STs, older old, illiterate, widows, those who are financially dependent, and those without access to public health facilities like potable drinking water are at a much higher risk of suffering from multiple diseases or disabilities than people not belonging to any of these categories. These risks are particularly high for the economically dependent, lower caste groups, the illiterate, widows and the older old. Interestingly, our results suggest a positive relationship between the consumption level (mpce) and the risk of multiple ailments, implying that a larger number of higher-consumption households are expected to report multiple diseases than the low-consumption households due to their better understanding about sufferings, ailments and health (Sen, 2002). This relationship is, therefore, in line with many other studies tracing SES-health linkages (Alam and Tyagi, 2009).

CONCLUDING OBSERVATIONS

Like many other countries in the world, India is also in the process of major age-related structural changes with an acceleration of growth in its adult populations, particularly those aged 60 years and more. Several projections reveal that the size of older adults in the country is expected to reach 100 million or even more by the end of this decade. Also, a large majority of this population is expected to be living in rural areas for many years to come. With these facts in perspective, there are numerous life quality issues that need to be examined to ensure the survival of this fast-growing population group with certain degrees of socio-economic well-being, inclusive environment and better physical health. This article examines some of these issues within this perspective, particularly the share of the rural aged across most major states in the country cross-classified by: (i) broad age categories (60-74 and 75+), (ii) sex, and (iii) three well-defined social groupings—SC, ST and the rest (or others). Another significant objective of this study was to analyse variations in socio-economic conditions of the rural aged, and to assess how these variations affect their health outcomes, both current and over a span of past 12 months. The latter part of this analysis, as may be noticed, was mainly undertaken to supplement our earlier contentions that many of the elderly in India, and particularly the rural inhabitants, are living in socio-economic conditions that fail to sustain them physically in their later years of life.

On the basis of the unit level data from the NSS 52nd and 60th Rounds in 15 major states, an attempt was made in this analysis to examine differentials between the nominal and the real per capita monthly consumption expenditures of households with elderly co-residents. The question of how far these (real and nominal) expenditures vary over time has also been examined. Most of these results were obtained separately for three broad social groups—namely, SCs, STs and upper castes. All these were obtained by the observed social groups. According to expectations, while there was a considerable variation in consumption levels in almost every state, these results also underscore the fact that the average consumption level of the rural old could in no way suffice or make them secure against the vagaries of the later life. Further, there has hardly been a notable improvement in the real per capita consumption expenditure of households between the two comparison years—namely 1995-96 and 2004.

Within this perspective, we tried to analyse the self-reported health outcomes of the sample old and some of their socio-economic correlates. Three health conditions were analysed, each with the following multiple responses: (i) current health, (ii) relative health (that is, a comparison over the past 12 months), and (iii) number (or count) of diseases including collateral diseases suffered by the responding old members. A multinomial logit (to study current and relative health) and a count data model (to analyse the number of diseases) were used to test the hypothesis that caste, widowhood and public health measures are a few of the major attributes in health outcomes along with age, sex, education, economic status, and per capita monthly consumption expenditure, among others. Our results very strongly supported the SES hypothesis and also signified the relevance of the social quality concept in the context of ageing and old age.

Our results also indicate a very high prevalence of consumption poverty in the rural areas, lack of social cohesion as the hierarchal nature of castes still plays a role, and a low health status of the ageing population. All this, and particularly the conditions of widows, warrants sustained corrective measures directed at improving the rural economy through appropriate investment efforts as well as the creation of elderly healthcare infrastructure, perhaps as a part of the National Rural Health Mission (NRHM). Currently, the State-provided healthcare services in rural areas are either inefficient or directed entirely towards reproductive health. Geriatric care and its financing mechanism appear to be complete non-issues for health administrators and policy-making institutions in the country.

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NOTES

1. The number of elderly widows and their share in the total population of women aged 60+ years is alarmingly large in India with a large majority of them living in rural areas. Focusing on the north Indian region and its complex caste system, a detailed study by Chen and Dreze (1995) provides frightening details about the economic deprivations of this highly vulnerable population group, which also tends to produce poor health outcomes in the later ages. Some of our subsequent exercises on the socio-economic correlates of health clearly underscore this fact.
2. The recent National Rural Health Mission (NRHM, 2005–2012), launched by the Centre to address the needs of better healthcare services in rural areas, appears to have completely ignored the issue of rural ageing and its health ramifications over the coming years.
3. A higher share of the 75+ older old people may imply a greater demand for health services, and the need for the creation and financing of geriatric/long-term care infrastructure.
4. Despite severe limitations in the concept of self-reported ailments and health conditions (Sen, 2002), these details may help in the growing debate on life quality, and also in the creation of some geriatric infrastructure in the rural areas.
5. These states cover more than 90 per cent of the country's elderly population.
6. Household consumer expenditure is measured by the NSSO as the expenditure incurred by a household on domestic account over a reference period of the previous 30 days. It also includes the imputed values of home-produced goods and services for consumption purposes. The imputed rent is excluded from the consumer expenditure of owner-occupied houses.
7. As noted, price adjustment to derive the real PCMCE was made by using the Consumer Price Index for Agricultural Labour with July 1986–June 1987 taken as the base year. The adjustments obtained for the 52nd Round were based on a 12-month average, while for the 60th Round, it relies on a 6-month average covering the period January–June 2004.
8. We refrain from making comparisons between the 52nd and 60th Rounds of the NSS for comparability problems.
9.. A further sub-classification has not been tried owing to the inadequacy of the sample population.
10. In the actual questionnaire, the question on relative health (that is, the second question) offers a total of five different choices to rank the respondents' health. We, however, clubbed them into three choices to simplify the subsequent analysis.
11. Many illiterate people, for example, do not know that they are diabetic or running high/low blood pressure.
12. The underlying question in the survey pertained to ailments on the date of enquiry. Many people— especially the illiterate—may have faltered while answering this question.
13. The underlying assumptions in these exercises are that the socio-economic conditions, along with the age and sex of individuals, help in shaping their health in later life including the onset of diseases. The overall health condition of individuals was proxied on the basis of two questions discussed in Section 3.1 (also see Note 8 above). One was to rank the current health status of the respondents into: (i) very good, (ii) good/fair, and (iii) worse. And the other was to identify the health status changes of older respondents over two points of time: as compared to last year, are you currently feeling: (i) better, (ii) nearly the same, or (iii) worse? In addition, the NSS 60th Round also provides data on a maximum of five diseases suffered by the individuals on the date of the survey.

    Methodologically, the count data models (CDMs) usually rely on Poisson distribution with parameter λi, which is related to the explanatory variable *Xi*. A major limitation of this distribution, 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 (Green, 2002; Long, 1997; Cameron and Trivedi, 1986). The Poisson model is generalized by introducing an individual, unobserved effect into the conditional mean (i.e., $\ln \lambda I = X'I\ \beta + \varepsilon$). This brings 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 the binary logit, was applied to capture the socio-economic and age effects on the current and relative health conditions of the responding old. In order to minimize the number of comparisons (or outcome categories), we curtailed the total responses into the following three: (i) better, (ii) nearly the same, and (iii) worse. For further details on the multinomial logit and its tests, see Long (1997, Chapter 6).

14. Relative risk has become one of the standard measures in biomedical research. It often approximates the odds ratio (OR), though only under certain well-defined conditions. When the incidence of an outcome in the study population is low (say <10%), the odds ratio is close to the risk ratio (RR). However, the more frequent the outcome becomes, the more the OR will over-estimate the RR. Such possibilities strongly exist in our case. For example, certain categories of the socially underprivileged aged in our population suffer a very major risk of multiple conditions than others (for further details, see Zhang and Yu, 1998; Lee, 1994).

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