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How Healthy are Keralites? An Exploration of Disability Free Life Expectancy

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High Life Expectancies (LE) resulting from low mortality rates are often interpreted to indicate a high health status for Kerala. This interpretation can turn out to be inadequate when morbidity is considered. The available studies discuss the health status by analysing either mortality rates or morbidity rates that cannot indicate the expected healthy life years for the state. This study attempts to analyse the health status in Kerala using a combined index of mortality and morbidity, namely, Disability Free Life Expectancy (DFLE). Based on mortality data from Sample Registration System (SRS) and morbidity/disability data from National Sample Survey (NSS), it estimates DFLE at major age levels -for males and females, and for both rural and urban areas. The study finds LE and DFLE moving in opposite directions reflecting worsening health status in Kerala. This trend is noticeably higher for old adult and old age population at all the three levels, besides denoting a 'morbidity expansion'. An analysis of diseases contributing to the loss of DFLE points to a major role of chronic/degenerative diseases at older ages. The study suggests that the state needs to focus on policies to reduce morbidity levels along with an increase in life expectancy.

Key words: Quality of life, health status, life expectancy, disability-free life expectancy, degenerative diseases.

Introduction

A significant improvement in mortality decline and resultant better life expectancy comparable to the developed countries has made Kerala experience unique among the development paradigms. Studies often explain this aspect mainly in terms of a decline in death rates among infants, children and young mothers indicating a better quality of life in the state (CDS & UN 1975; Panikar & Soman, 1984). However, such an explanation becomes problematic when one looks at the paradoxical movement of mortality decline with spiralling morbidity rates occurring in the state, especially in the recent years. Isa mere decline in mortality accompanied by a better life expectancy a sufficient factor to explain the overall health status? If not, what could be the factors accounting for an actual improvement in healthy years after adjusting for mortality decline and changes in morbidity in Kerala?

Empirical studies have engaged in a serious debate regarding whether an increase in life expectancy can by itself lead to a healthy state of life of the people. According to a group of scholars, mortality decline accompanied by a corresponding increase in life expectancy comes about through postponement of the onset of morbidity and hence, morbidity tends to be compressed along with a decline in mortality (Fries & Capro, 1981; Fries, 1989; Fries, 2000). Others argue that a fall in mortality may not be necessarily accompanied by a decline in morbidity and that it rather increases the population with poor health ï a scenario where morbidity is expansive in nature with mortality (Gruenberg, 1977; Kramer, 1980; Schneider & Brody 1983). Between these two positions, some people also argue for the latter scenario, but with a decreasing prevalence of severe health related disorders (Verbrugge, 1991; 1994). This debate focuses

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attention on Kerala where the distinctiveness of the state lies in its achievement in life expectancy often comparable with that of developed countries.

With this context in view, we explore in this paper changes in the health status of people in Kerala over the years using a combined mortality and morbidity index, i.e., Disability Free Life Expectancy (DFLE). The specific questions we address in this paper are: (i) What is disability free life expectancy in Kerala; and, (ii) Which are the major groups of diseases detrimental to healthy years in the state? In the first section, the paper analyses the health status through DFLE using three levels of disability rates. The role of major groups of diseases that cause a loss in healthy years are examined in the second part.

II. Methodology and data

The study has used DFLE, a combined index of mortality and morbidity developed by Daniel Sullivan (1971), generally called as Sullivanôs Method, for examining the actual health status in Kerala. The DFLE index helps to understand whether the additional years of life gained from a mortality decline are spent in good health. The estimation of DFLE is simple and easy to understand. An Abridged Life Table and the age wise prevalence of ailments related data are the only aspects required for its estimation. As a first step in DFLE estimation, the number of person years lived in the various age intervals from the life tables can be calculated ($_nL_x$ column) by using Age Specific Death Rates (ASDR). The person years lived in various age intervals are then divided into years spent without ailments and with ailments as the second step. The years with ailments are the product of the prevalence of ailments and the years lived in various age groups. In this way, as a third step, a new series of $_nL_x$ values are generated which can be used to construct new Life Tables, showing the number of expected years with disability. The next step is to obtain the number of years without ailments (DFLE) from the total life expectancy by subtracting the person years spent with ailments.

This paper considers three levels of DFLE estimation by way of categorising the severity of disability differently in its first part of analysis. Among them, the first sub-part relies on the proportion of people reporting ailment[1] as self-perception of morbidity for DFLE estimation. The second and the third sub-parts of DFLE estimation use the proportion of people reporting restriction of activities[2] and confinement to bed[3] respectively as proxies for disability. In the second part, the paper decomposes the loss in disability free life years by categorising the causes into two major groups, namely, communicable and primary healthcare oriented ailments and degenerative and chronic diseases based on the nature of prevalence as well as relevance for healthcare intervention.

All these estimations have been carried out for the age at birth, young adult age (at exact age 15), old adult age (at exact age 40), older age (at exact age 60) and also oldest age (at exact age 80) while taking into account the differences in susceptibility to ailments specific to those ages. We have used the Age Specific Death Rates (ASDR) from SRS reports for various years and the morbidity data from NSSO 52nd, 60th and 71st Rounds.

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[1] Ailment/morbidity means a deviation from the state of physical and mental well-being. The survey considered one will be treated as sick if one feels sick. It also included: (i) Cases of visual, hearing, speech, locomotor and mental disabilities; (ii) Injuries cover all types of damages such as cuts, wounds, hemorrhage, fractures and burns caused by an accident, including bites to any parts of the body; and, (iii) Cases of spontaneous abortion ï natural and accidental.

[2] By restricted activity is meant the state of health which prevents the ailing person from doing any of his/her normal avocation. Employed personsô restricted activity meant abstention from economic activity. In the case of a housewife, it meant cutting down of the daysô chores. For retired persons, this referred to pruning of his/her normal activity. In the case of students, it referred to abstention from attending classes. However, the infant below school going age and for the very old restricted activity was not to be considered in view of the fact that their usual activities are of restricted nature.

[3] Confined to bed referred to a state of health where the ailing person is required or compelled to mostly stay in bed at his/her residence/home.

III. Disability Free Life Expectancy in Kerala

Changes in life expectancy and DFLE adjusted with the rate of perceived morbidity (hereafter DFLE by morbidity termed as DFLE_MORB) in Kerala for the years 1995-96, 2004 and 2014 are shown in Table 1. The table shows the life expectancy in Kerala at 69.2 years for males and 74.8 years for females for 1995-96, while showing the same improving to 72.9 and 77.8 years for males and females respectively for 2014. This means that on an average in 1995-96 a male child at birth can expect to live for 69.2 years, while a female child for 70.9 years. They increased further by 3.7 and 3 years for males and females respectively for the year 2014.

However, DFLE_MORB is only 50.4 years for males and 49.3 years for females at their age of birth in 2014. This amounts to only 69.1 and 63.4 percentage of life expectancy for males and females respectively at the same age in 2014, i.e., a loss of 22.5 healthy years for males and 28.5 healthy years for females in that age, because of a given ailment. Notably, DFLE_MORB for the year 2014 is considerably lower than for the 1995-96, i.e., 60.4 for males and 65.0 for females. This change indicates that the healthy life span (years) of the population has come down substantially between 1995-96 and 2004 due to given ailments. Interestingly, the change in DFLE_MORB and LE is paradoxical in that LE appears an increasing trend, while DFLE_MORB moves in the opposite direction over the years.

Table 1: LE and DFLE_MORB in Kerala for 1995-96, 2004 and 2014

Age	1995-96			2004			2014		
	LE	DFLE	%	LE	DFLE	%	LE	DFLE	%
Males									
0	69.2	60.4	87.3	70.9	51.1	72.1	72.9	50.4	69.1
15	55.7	48.6	87.2	57.3	40.5	70.7	58.9	38.8	65.8
40	32.5	26.8	82.3	34.0	19.9	58.5	35.4	17.9	50.6
60	16.4	12.1	74.0	17.6	7.6	43.1	18.7	6.7	36.1
80	6.3	3.8	60.4	6.9	2.7	39.5	6.2	2.4	39.3
Females									
0	74.8	65.0	86.9	77.3	52.4	67.8	77.8	49.3	63.4
15	61.4	53.1	86.5	63.7	41.1	64.5	64.1	37.7	58.8
40	37.3	30.7	82.3	39.7	20.6	51.7	40.4	17.0	42.2
60	19.4	15.2	78.1	21.4	8.6	40.5	22.9	7.1	31.2
80	6.8	5.1	74.5	7.8	3.0	38.5	9.1	2.9	31.5

Source: Calculated from reports of SRS and NSSO52nd, 60th and 71st Rounds.

Another dimension of DFLE_MORB is how it has changed across the major age-groups over the years. Table 1records the level of life expectancy and DFLE_MORB in Kerala for the years 1995-96, 2004 and 2014 at age 0, 15, 40, 60 and 80 years. It can be seen that the absolute level of DFLE_MORB at all ages has declined from 1995-96 to 2014. For instance, the DFLE_MORB for males was 48.6 at age 15 and 3.8 at age 80 in Kerala for 1995-96, while the same declined to 38.8 and 2.4 years respectively for the year 2014.Notably, the percentage of DFLE_MORB vis-a-vis LE has declined at higher rates for the oldest ages for both males and females over the years. For instance, the percentage share of DFLE_MORB as against LE is 87.3 for males and 86.9 for females at birth while only 60.4 for males and 74.5 for females at age 80 for the year 1995-96. These have declined to 69.1 and 63.4 for both males and females at birth and 39.3 and 31.5 at age 80 for the year 2014. This dramatic decline in the percentage share of DFLE_MORB in relation to LE towards the oldest ages indicates a severe loss in the health status of elderly for the year 2014, which is a matter of concern in view of the state heading to an ageing scenario.

A similar DFLE_MORB and LE pattern is visible in respect of both the urban and rural areas as shown in Appendix 1. The Tables record a considerable disparity between DFLE_MORB and LE in respect of rural and urban areas in the state. However, the reduction is higher among the

rural population for both males and females across all age groups. Also, the percentage share of DFLE_MORB to LE has come down towards the oldest ages in both the areas, but the reduction is greater for rural population, especially for females. Interestingly, the rural population exhibits better expected life years than its urban counterpart. But in terms of DFLE_MORB, the urbanites are better placed than rural people, indicating that they enjoy a healthier life with fewer ailments.

A major criticism voiced with respect to increased morbidity rates reflecting a high loss in healthy years in Kerala could be due to an exaggerated reporting of ailments by the people during the time of survey caused from their increased perception. In such a situation, the probability of a proper understanding of morbidity, and consequently of the actual DFLE, may be limited. To overcome this problem, we take ailment as ódisability reportedô in the coming sections by considering the number of persons reporting restricted activity and the rate of óconfined to bedô as proxies. These proxies are less likely to be distorted by an exaggerated perception of ailments.

Table 2 depicts the status of DFLE adjusted with the rate of disability (hereafter DFLE by the rate of restricted activity termed as DFLE_RA) reported for the years 1995- 96, 2004 and 2014 in Kerala. It mirrors an average life expectancy without any restricted activity at 65.8 years for males and 69.2 years for females, accounting for 90.2 per cent and 89.1 per cent of total life expectancy for both males and females respectively for the year 2014 as against 64.0 years for males and 69.5 years for females for 1995-96, indicating a declining trend for 2014. The difference in DFLE_RA in relation to LE also can be seen across the age groups. The Table shows a lower share of DFLE_RA in relation to LE for the oldest ages for both males and females indicating the years lost due to restricted activity increasing with the ages. This discount is found higher for the year 2014 than for the year 1995-96, indicating a deteriorating health status with aging. However, the decline in DFLE_RA is insignificant as compared with the decline in DFLE_MORB. This indicates that though Kerala has witnessed changes in disability over the decades, there seems no improvement in severe restrictions with respect to the major activities of people.

Table 2: LE and DFLE_RA in Kerala for 1995-96, 2004 and 2014

Age	1995-96			2004			2014		
	LE	DFLE	%	LE	DFLE	%	LE	DFLE	%
Males									
0	69.2	64.0	92.4	70.9	63.2	89.2	72.9	65.8	90.2
15	55.7	51.4	92.2	57.3	50.7	88.6	58.9	52.9	89.8
40	32.5	29.2	89.6	34.0	28.7	84.3	35.4	30.5	86.2
60	16.4	14.0	85.0	17.6	13.7	77.7	18.7	15.4	82.4
80	6.3	4.6	72.2	6.9	5.0	73.2	6.2	4.7	76.2
Females									
0	74.8	69.5	93.0	77.3	68.7	88.8	77.8	69.2	89.1
15	61.4	56.9	92.7	63.7	55.9	87.9	64.1	56.6	88.3
40	37.3	33.8	90.5	39.7	33.6	84.6	40.4	34.0	84.2
60	19.4	17.3	89.3	21.4	17.1	80.3	22.9	18.1	79.1
80	6.8	6.2	91.1	7.8	5.5	69.8	9.1	6.8	75.2

Source: Calculated from reports of SRS and NSSO 52nd,60thand 71st Rounds

A similar DFLE_RA pattern is visible in respect of the rural and urban areas as shown in Appendix 2. Although the percentage share of DFLE_RA, relative to LE has got reduced over the years for both rural and urban areas, the absolute DFLE_RA is considerably higher for urbanites indicating that they are better placed than the rural people, both males and females. Here, it must be pointed out that the rural-urban DFLE_RA pattern also indicates a concern regarding the health status of the rural population, similar to DFLE_MORB.

The rate of confined-to-bed can be considered as an extreme level of disability and hence, the loss of health status. In this case, life expectancy can be adjusted with life-years spent without any severe disability which tends to make a person remain confined to his/her bed. Table 3 portrays the disability adjusted DFLE reported as confined-to-bed (hereafter DFLE_CB) in Kerala

over the years 1995-96, 2004 and 2014. It can be seen that DFLE_CB is increasing in the state while compared with the years 1995-96 and 2004 where now males can expect to live for 70.8 years (97.2%) and females for 75.3 years (96.8%) at birth without any health related problem that can confine them to bed for the year 2014. It should be noted that in contrast to the changes observed in health status in respect of other DLFEs (i.e., DFLE_MORB and DFLE_RA), DFLE_CB indicates an improved health status in terms of absolute levels in Kerala with mortality declining.

Table 3: LE and DFLE_CB in Kerala for the years 1995-96, 2004 and 2014

Age	1995-96			2004			2014		
(years)	LE	DFLE	%	LE	DFLE	%	LE	DFLE	%
Males									
0	69.2	67.0	96.8	70.9	68.3	96.3	72.9	70.8	97.2
15	55.7	54.1	97.1	57.3	55.1	96.2	58.9	57.3	97.3
40	32.5	31.4	96.3	34.0	32.3	95.1	35.4	34.2	96.6
60	16.4	15.6	94.7	17.6	16.4	93.2	18.7	17.7	94.7
80	6.3	5.7	89.3	6.9	6.1	88.9	6.2	5.4	86.9
Female									
0	74.8	72.6	97.1	77.3	74.6	96.5	77.8	75.3	96.8
15	61.4	59.6	97.2	63.7	61.3	96.2	64.1	62.0	96.6
40	37.3	36.0	96.4	39.7	37.8	95.2	40.4	38.6	95.6
60	19.4	18.6	95.7	21.4	20.0	93.5	22.9	21.4	93.6
80	6.8	6.4	94.3	7.8	6.5	82.9	9.1	8.0	88.6

Source: Calculated from SRS 1993-97 and 2002-06reports; NSSO 52nd, 60th and 71st Round Survey.

In short, morbidity/ailment as well as disabilities adjusted DFLE show the severity of loss in healthy life period in the recent years in Kerala. Although the loss is evident in respect of both males and females, the latter exhibit a greater loss in healthy life - in fact an increased loss over the decades except that from DFLE_CB. It reflects the worsening health status of elders, particularly at the oldest ages. Both rural and urban areas show an almost similar DFLE pattern estimated based on ailments reported. Interestingly enough, rural people exhibit a better LE but comparatively a low DFLE.

IV. Contribution of major disease groups in the loss of DFLE

Changes in morbidity can be linked to the prevalence of diseases in a given society. Information on diseases can help to devise appropriate policy responses towards curbing a high incidence of morbidity. In this section, we analyse the healthy life period lost because of major groups of diseases in Kerala for the year 2014 using NSS data. However, a major criticism against the NSS data relates to its inadequacy in terms of scientific identification and classification. Although there exist difficulties in the identification of the nature of individual diseases, a classification of diseases in broad groups as communicable and non-communicable can help to reduce the problems of classification. Moreover, a classification into communicable and non-communicable diseases can also fit into an epidemiological perspective which can assist in policy intervention.

There are61 ailment groups used in the NSS 71st round for understanding the nature of ailments. Our study has broadly classified these diseases into three major groups, considering the nature of diseases as well as the availability of information. The first group of diseases includes communicable and primary health care oriented ailments, such as fever with loss of consciousness, fever with rashes, fever with diphtheria, all other fevers, tuberculosis, filariasis, tetanus, HIV/AIDS, other STDs, jaundice, diarrhoea, worm infestation, pregnancy with complication, complication in mother after birth and illness in the new born. The second group covers all identified degenerative and chronic diseases such as cancer, anaemia, bleeding disorders, diabetes, under-nutrition, goitre, other endocrine, metabolic and nutritional diseases (including obesity),

mental retardation, mental disorders, head ache, seizers or known epilepsy, weakness in limb muscles, stroke, memory loss, discomfort/pain in the eye, cataract, glaucoma, decreased vision, disorders of eye movement, ear ache with discharge, decreased hearing, hypertension, heart diseases, acute upper respiratory infection, cough with sputum, bronchial asthma, diseases of mouth, pain in abdomen, lump or fluid, gastro intestinal bleeding, skin infection, joint or bone disease, back or body ache, abnormality in urination, pain in pelvic region and irregularity in menstrual cycle. The third group includes all other diagnosed and undiagnosed ailments including accidental injury, accidental drowning, burns and corrosions, poisoning, intentional self-harm, assault, contact with venomous/harm substances, symptoms not fitting into any category and could not even be diagnosed. Notably, the study did not include child birth into any group of diseases.

Figure 1: Healthy years lost due to major groups of diseases among males at selected ages in Kerala, 2014

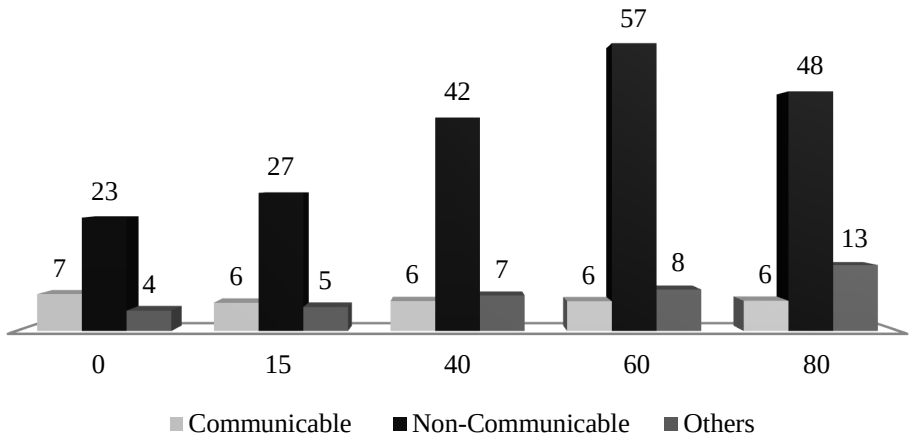
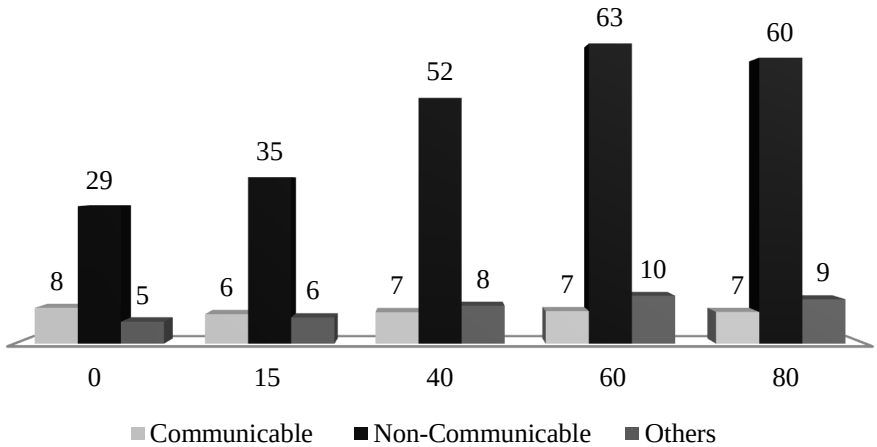


Figure 2: Healthy years lost due to major groups of diseases among females at selected ages in Kerala, 2014



According to the NSS data for the year 2014, degenerative and chronic diseases are prominent in determining morbidity in Kerala. Out of 72.9 years of life expectancy at birth among the males, 23 per cent of health life has been lost due to degenerative and chronic diseases (Group 2), while the communicable and primary healthcare oriented diseases (Group 1) and Other diagnosed and undiagnosed diseases (Group 3) caused only 7 and 4 per cent respectively (Figure 1). Remarkably, this predominance of degenerative and chronic diseases in losing healthy life becomes severe towards the older ages among the males. Out of 18.7 years of life expectancy

among the males at the age of 60, as much as 57 per cent is lost because of degenerative and chronic diseases while those were only 6 per cent and 8 per cent respectively by primary healthcare oriented diseases as well as Other diagnosed and undiagnosed diseases among them.

A similar pattern over healthy years lost due to major groups of diseases is evident among females also. As shown in Figure 2, females have lost 29 per cent of their healthy life at birth due to degenerative and chronic diseases while primary healthcare oriented diseases as well as Other diagnosed and undiagnosed diseases are responsible for only 8 and 5 per cent respectively on healthy years lost at the same age. The dominance of degenerative and chronic diseases in healthy years lost becomes severe towards the older ages among the females also. At the age of 60 years, 63 per cent of healthy life was lost due to this group of diseases among the females, while 7 per cent was caused by primary healthcare oriented diseases and 10 per cent by Other diagnosed and undiagnosed diseases. In short, an analysis of contributory groups of diseases in respect of DFLE lost for the year 2014 points to a major role of the degenerative and chronic diseases, especially with regard to the older ages.

V. Concluding remarks

The paper has explored changes in the health status of people in Kerala, using a single mortality and morbidity index, DFLE. It has been shown that a disability-free expected life span is considerably lower than the Life Expectancy, especially at the older ages. Such a difference further widens towards the later years on account of a higher loss in healthy years due to an increase in morbidity rather than a decline in mortality, termed as morbidity expansion. Interestingly, the loss in disability free years caused by severe disabilities such as ôrestricted activityô and ôconfined-to-bedô is considerably less. The absolute severe disability adjusted DFLE is on the rise indicating an improvement in the disability free life in terms of absolute number of years. However, the percentage share of healthy life relative to the total expected years of life has shown a persistent decline over the years reflecting a worsening health status. An exploration into the contributory factors towards the loss of a healthy life reveals the prominent role of degenerative and chronic diseases. Notably, the impact of these diseases is worse on both males and females at older ages.

An exploration of the health status in Kerala brings out several issues for debate. There is a high difference between the DFLEs estimated on the basis of the rate of ailment reported and proxies of rates of disability such as the rate of ôrestricted activityô and ôconfined-to ï bedô. This indicates the possibility of exaggerated reporting of ailments due to perception differences on the part of people rather than severity of ailments. In this case, inferring a heavy loss in the disability free years from an ailment rate adjusted DFLE can be less meaningful. At the same time, DFLEs adjusted with the rate of ôrestricted activitiesô and ôconfined to bedô also throw up the loss of healthy years which is a matter of concern. The decline of healthy years even with an improvement in life expectancy over the time periods paradoxically reflects the overall worsening health status. The latter, especially in the older ages, is a matter of concern as the state expects more elderly people in the coming years.

An increase in the proportional share of disability years mainly due to degenerative and chronic diseases requires attention, especially with the state already experiencing high healthcare burden. As noted earlier, women and rural people have a greater disadvantage in terms of DFLE. Whenever health expenditure shoots up, this group gets more exposed to greater shocks than others. Therefore, provisions for a better health care at moderate rates should be made available in rural areas, especially for women. Indeed, the state should come up with appropriate policy responses to curb the onset of diseases through preventive and promotional interventions apart from curative medical care. Failure to make such necessary interventions can further weaken the health status, increasing the healthcare burden of the state which in turn can cast shadow over the credibility of its achievement in respect of health status.

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Appendix 1: LE and DFLE_MORB in Kerala in 1995-96 and 2014

Age	Urban						Rural					
	1995-96			2014			1995-96			2014		
	LE	DFLE	%	LE	DFLE	%	LE	DFLE	%	LE	DFLE	%
Male												
0	67.6	60.6	89.6	72.8	50.6	69.6	69.4	60.1	86.6	72.6	48.6	66.9
15	55.0	49.2	89.4	58.9	39.0	66.2	55.9	48.3	86.5	58.5	38.2	65.3
40	31.9	27.3	85.8	35.4	18.2	51.5	32.7	26.5	81.2	35.0	17.2	49.3
60	15.6	12.1	77.5	18.2	7.3	40.3	16.6	12.1	72.9	18.6	6.4	34.6
80	5.5	3.8	68.3	5.4	3.0	54.9	6.5	3.8	58.4	5.9	1.9	33.1
Female												
0	74.1	66.5	89.7	76.8	48.0	62.5	74.9	64.4	86.0	77.6	50.5	65.1
15	60.7	54.3	89.3	63.1	35.9	56.8	61.5	52.6	85.6	64.0	39.0	61.0
40	36.7	31.8	86.7	39.7	16.0	40.2	37.6	30.4	80.9	39.9	18.2	45.7
60	18.7	15.3	81.8	22.4	6.1	27.3	19.6	15.1	77.1	22.1	8.7	39.5
80	6.6	4.7	71.7	8.4	2.7	31.7	6.9	5.1	74.5	7.8	2.7	34.0

Source: Calculated from SRS 1995 and 2014 reports; NSSO 52nd, and 71st Rounds

Appendix 2: LE and DFLE_RA in 1995-96 and 2014 in Kerala

Age	Urban						Rural					
	1995-96			2014			1995-96			2014		
	LE	DFLE	%	LE	DFLE	%	LE	DFLE	%	LE	DFLE	%
Male												
0	67.6	63.6	94.1	72.8	68.1	93.6	69.4	63.8	91.9	72.6	64.7	89.1
15	55.0	51.7	94.0	58.9	54.8	93.0	55.9	51.2	91.7	58.5	52.6	89.8
40	31.9	29.4	92.2	35.4	32.3	91.3	32.7	29.0	88.8	35.0	29.7	85.0
60	15.6	13.7	87.5	18.2	16.1	88.4	16.6	14.0	84.3	18.6	15.4	82.5
80	5.5	4.5	81.8	5.4	4.0	73.0	6.5	4.6	69.8	5.9	4.1	70.3
Female												
0	74.1	70.2	94.7	76.8	70.6	91.9	74.9	69.3	92.5	77.6	70.5	90.8
15	60.7	57.5	94.6	63.1	57.4	90.9	61.5	56.6	92.1	64.0	57.9	90.4
40	36.7	34.3	93.5	39.7	34.8	87.7	37.6	33.7	89.6	39.9	34.9	87.5
60	18.7	17.4	92.7	22.4	18.9	84.3	19.6	17.4	88.4	22.1	18.6	84.1
80	6.6	6.4	96.8	8.4	7.1	85.1	6.9	6.2	89.7	7.8	6.4	82.2

Source: Calculated from SRS 1995 and 2014 reports; NSSO 52nd, and 71st Rounds