NUTRITION AND HEALTH STATUS OF THE ELDERLY

Back ground information

According to Population Census 2011 there are nearly 104 million elderly persons (aged 60 years or above) in India; 53 million females and 51 million males; the number of elderly persons is projected to reach 158.7 million in 2025. From 5.6% in 1961 the proportion of elderly has increased to 8.6% in 2011 %; 71% of elderly population resides in rural areas while 29 % is in urban areas.

The life expectancy at birth during 2009-13 was 69.3 for females as against 65.8 years for males. The old-age dependency ratio climbed from 10.9% in 1961 to 14.2% in 2011 for India as a whole. For females and males, the value of the ratio was 14.9% and 13.6% in 2011. In rural areas, 66% of elderly men and 28% of elderly women were working, while in urban areas only 46% of elderly men and about 11% of elderly women were working. The literacy rates among elderly females (28%) are less than half of the literacy rate among elderly males (59%).

Census 2001 showed that in India over 75% of the elderly were living in rural areas; sex ratio in the elderly was 982 in rural and 1046 in urban areas. A third of the elderly were living below poverty line. It was estimated that 58% of the couple lived by themselves; 33 % lived with their children; 5% lived alone. Over 70% of men and 85% of the women were dependent on family for support. With increasing urbanisation and nuclear family system proportion and number elderly persons who have the traditional family based social and economic security will progressively decrease; the elderly persons therefore urgently need social and economic security interventions.

India has entered the era of triple burden of malnutrition. Under-nutrition, over-nutrition and micronutrient deficiencies are common among the elderly. There are considerable urban rural and interstate differences in the nutritional problems among the elderly.

The elderly population suffer higher rates of morbidity due to infectious diseases and non-communicable diseases including cardiovascular, musculoskeletal diseases, diabetes and cancers. The disability rates from age-related losses in dentition, hearing, seeing and moving around have an adverse impact both on the quality of life and on longevity.

It is well known that there are massive interstate and urban rural differences in the socio-demographic, nutrition and health status of the elderly population. Ready access to state specific data on numbers of the elderly, socio-economic, nutrition and health status of the elderly will enable states to:
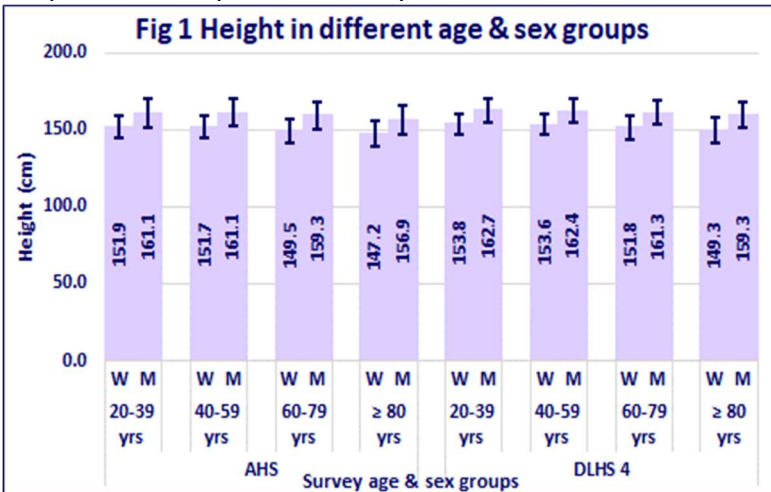
➢ draw up state specific plans for programme implementation (PIP);
➢ improve effective allocation of economic and human resources;
➢ improve access to services based on the needs of the elderly population; and
➢ accelerate the pace of improvement in quality of life of the elderly.

Use of these data sets and focussing their attention on the identified priority areas, monitoring progress and taking up midterm modifications may substantially improve food security, nutritional and health status of the elderly.

Material and methods

AHS CAB and DLHS 4 undertook the assessment of nutritional and health status of all the members of the selected households. Hence it is possible to compare the prevalence of the health and nutritional problems across age groups and find out the problems related to the health and nutritional status of the elderly as compared to the younger persons from the same household.

In both these surveys data collection was done by trained health para-professional personnel. Prior to initiation of the survey all the para professionals recruited by various agencies were trained in undertaking measurement of height, weight, measuring blood pressure using digital blood pressure monitor, collecting blood for Hb estimation on a filter paper and undertaking blood sugar estimation using glucometer. Only those personnel who had acquired the required accuracy in measurements conducted the survey. All equipment for the survey were centrally procured and tested for accuracy before being sent to the survey agencies. BP measurements were taken twice five minutes apart. As a quality assurance measure duplicate measurement of height, weight BP were done in 10% of the persons surveyed; Hb and blood glucose estimations were also done in duplicates in 10 % of the persons surveyed.


Fig 1 Height in different age & sex groups

Raw data from the AHS and DLHS were analysed to find out the prevalence of nutritional problems underweight, overweight and anaemia.

Results:

Mean height in men and women in different age groups in AHS and DLHS4 states is shown in Fig 1. There was a 10 cm differences in mean height between men and women across ages. Across all age groups and in both sexes


Fig 2 Weight in diffferent age & sex groups

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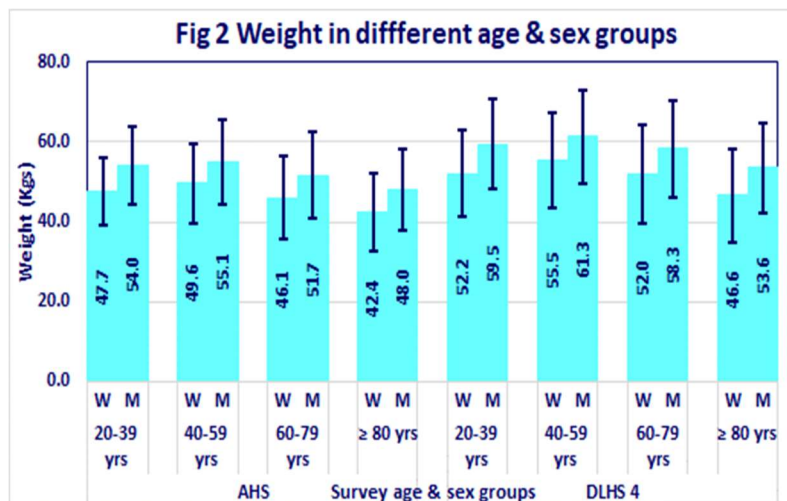
the mean height in the DLHS4 states were higher by about one cm as compared to the AHS states. Mean height among the elderly (both men and women) was about 1-2 cms lower as compared to the men and women in the age group 40-59 years. This is a well-recognised fact and is due to compression of the soft tissues with increasing age. Mean weight in men and women in different age groups in AHS and DLHS4 states is shown in Fig 2. Across all age groups and in both sexes the mean weight in the DLHS4 states were higher by 5 to 6 Kg as compared to the AHS states; there was a 5 to 7 kg differences in mean weight between men and women across ages. Mean weight among both men and women was about 3-4kg lower in the 60-79 year age group as compared to the men and women in the age group 40-59years. The mean weight in men and women beyond 80 years was lower by 3-4 kg as compared to the 60-79 year age group.


Fig 3 BMI in different age & sex groups
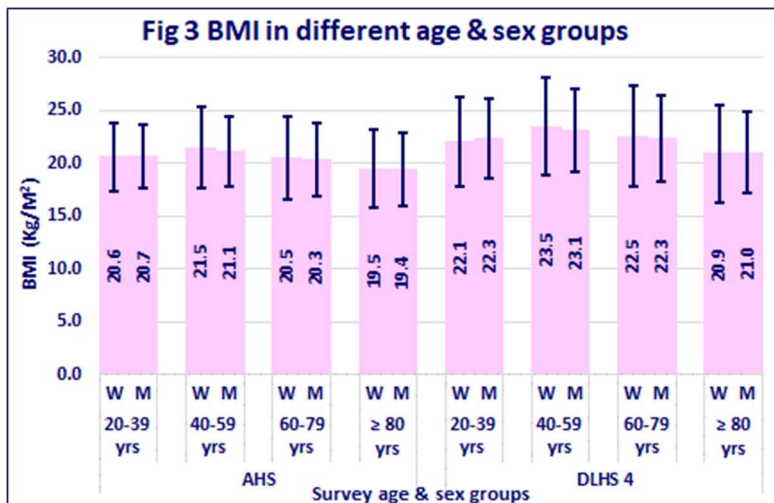
Changes in BMI in relation to age is shown in Fig 3. Across all age groups and in both sexes the mean BMI in the DLHS4 states were higher as compared to the AHS states. The mean BMI was highest in the 40-59 year age group both in men and women and in AHS and DLHS 4 states. Mean BMI among both men and women lower with increasing age from 40-59, 60 -79 and more than 80 years.

Frequency distribution of BMI in relation to age in men and women from AHS and DLHS4 states is given Fig 4a and b and 5a and b. At all age groups including the elderly frequency distribution of the BMI in AHS states is to the left of the frequency distribution of the BMI in DLHS 4 states. In both the surveys the frequency distribution of BMI in the elderly men and women is to the left of the frequency distribution of BMI in younger persons. Frequency
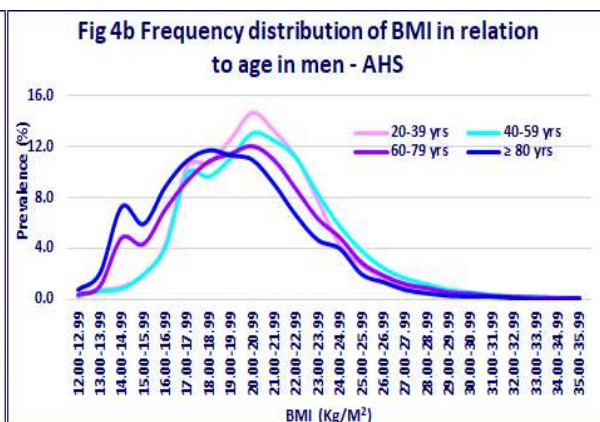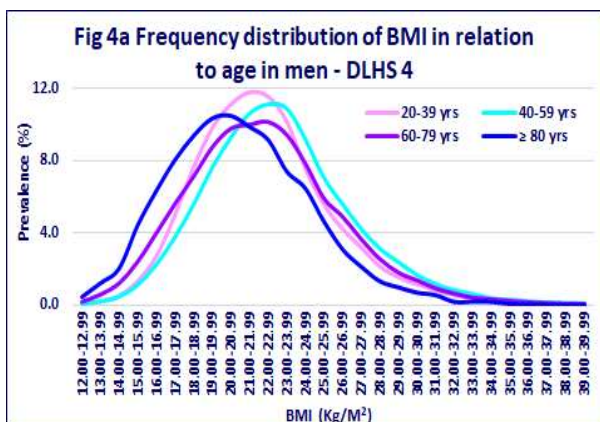

distribution of BMI in the over 80 age group is the left of the frequency distribution of the BMI for 60-79 years both in men and women in both AHS and DLHS 4 surveys.

Fig 5a Frequency distribution of BMI in relation to age in women - DLHS 4

Fig 5b Frequency distribution of BMI in relation to age in women - AHS
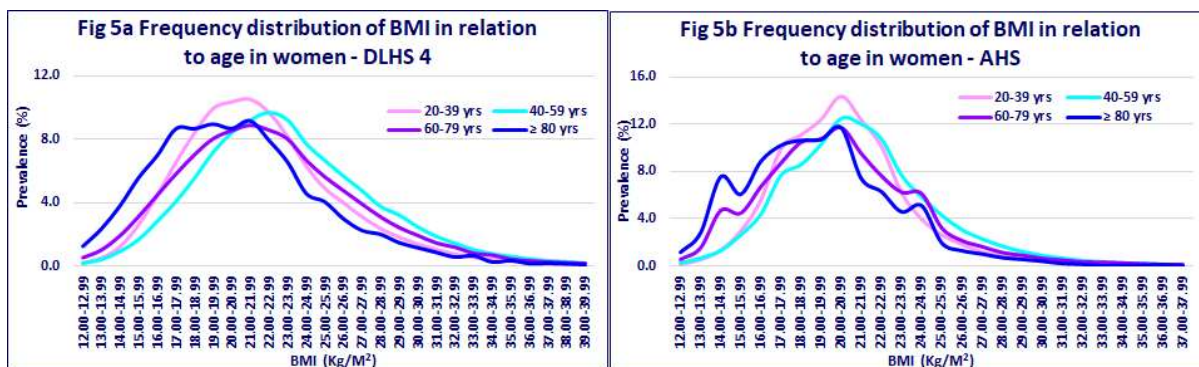
Nutritional status of men and women as assessed by BMI (under-nourished <18.5, normal 18.5-24.9 and over-nourished ≤ 25) in relation to age is given in Fig 6.

Prevalence of Under-nutrition

Fig 6a Nutritional status in relation to age
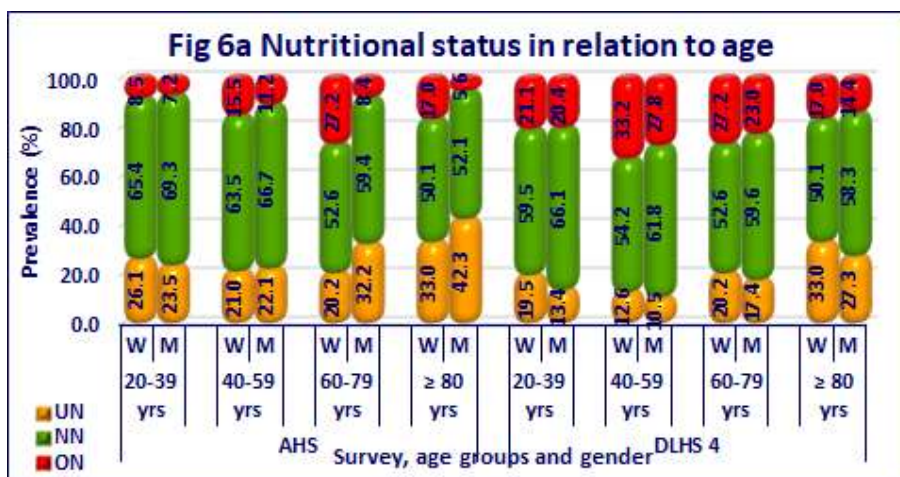
Both in AHS and DLHS states prevalence of under-nutrition was higher among the elderly as compared to the men and women in the 40-59 year age group. In AHS states prevalence of under-nutrition was higher across all age groups including elderly as compared to the DLHS 4 states. In AHS states prevalence of:

➢ Under-nutrition in men in the 60-79 and beyond 80 years age groups were higher as compared to 40-59 year age group;

➢ Under-nutrition in women in 60-79 age group was essentially similar to the prevalence of under-nutrition in the 40-59 years;

➢ Under-nutrition in women over 80 years were substantially higher as compared women in the 60-79 age group.
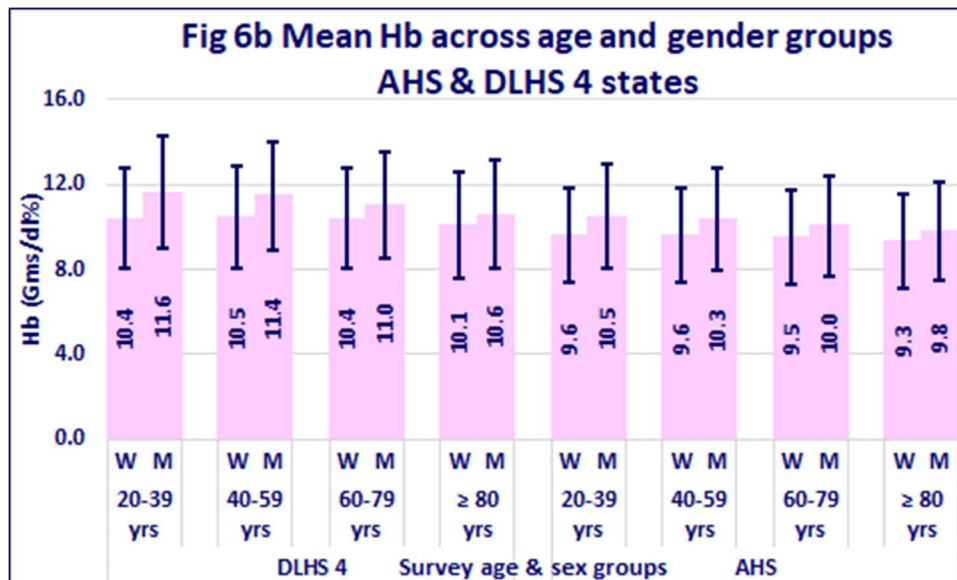
In DLHS states prevalence of:

➢ undernutrition was lowest and prevalence of over-nutrition was highest in the 40-59 year age group.

➢ undernutrition was higher among women as compared to men both in the 60-79 year age group and over 80 year age group.

Prevalence of over-nutrition

Prevalence of over-nutrition was higher in DLHS 4 states across all age groups including the elderly. In AHS states prevalence of:

➢ over-nutrition was higher in women as compared to men both in the 60-79 age group and over 80 years age group;
➢ over-nutrition in women in the 60-79 year age group was higher as compared to over 80 years.

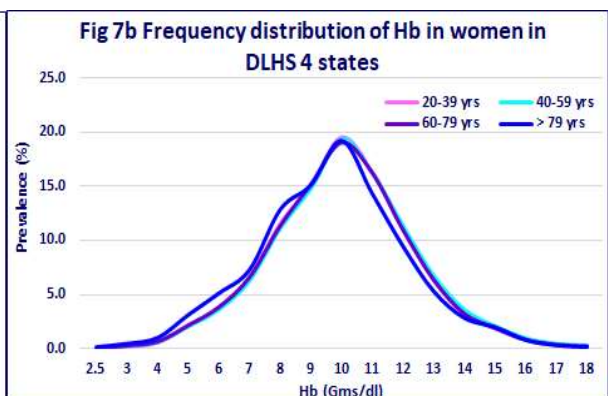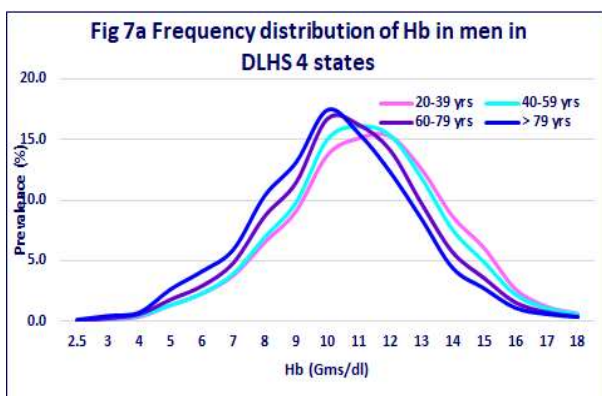In the DLHS 4 states prevalence of over-nutrition both in men and women was lower in the elderly as compared to the 40-59 year age group. Over-nutrition in women were lower in the 80+ age group as compared to the 60-79 age group. (Fig 6 a)


Fig 6b Mean Hb across age and gender groups AHS & DLHS 4 states

Haemoglobin status of the elderly

Data on mean Hb in men and women across age groups in AHS and DLHS states is given in Fig 6b. The mean Hb was higher both in men and women in DLHS4 states as compared to the AHS states. There was a decline in mean Hb with increasing age beyond 60 years both in men and women.

Frequency distribution of Hb in men and women across ages in the DLHS4 states and AHS states is shown in Fig 7a and b and Fig 8 a and b. Elderly men both in the AHS and DLHS 4 states had a frequency distribution of Hb to the left of the frequency distribution in younger men. In women there was not much difference in the frequency distribution of Hb in relation to age. In both sexes and in all age groups the frequency distribution of Hb in AHS states was to the left of the frequency distribution of Hb in DLHS 4 states.

Fig 7a Frequency distribution of Hb in men in DLHS 4 states

Fig 7b Frequency distribution of Hb in women in DLHS 4 states

Prevalence of anaemia in the elderly

Fig 8a Frequency distribution of Hb in men in AHS states

Fig 8b Frequency distribution of Hb in women in AHS states
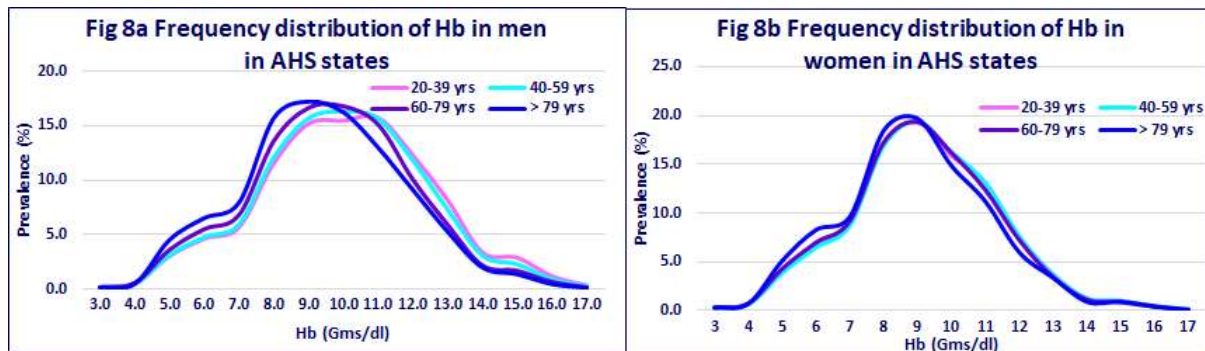
Prevalence of anaemia in men and women across ages in the AHS and DLHS4 states is shown in Fig 9. Prevalence of anaemia was higher in elderly men and women as compared to younger adults both tin the AHS and in the DLHS4 states. Prevalence of anaemia across age groups and in both the sexes was higher in the AHS states as compared to the DLHS 4 states.

Policy and programme implications of the findings

In India over 70% of elderly men and 85% of the elderly women were financially and physically dependent on family for support; many face problems in terms of financial and food security. Age related changes in taste, dental problems which make eating difficult, problems in absorption of food and psychosocial problems may also play some role in the higher prevalence of under-nutrition and anaemia in the elderly.

India has entered the era of triple burden of malnutrition. Both under- and over-nutrition, and micronutrient deficiencies are more common among the elderly as compared to the younger persons from the same families. Prevalence of both under-nutrition and anaemia are higher in the elderly living in AHS states as compared to the DLHS 4 states There are
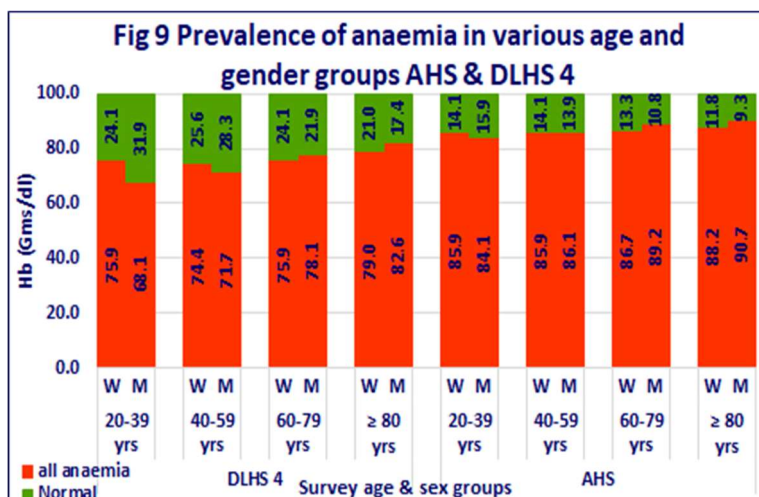
Fig 9 Prevalence of anaemia in various age and gender groups AHS & DLHS 4

considerable urban rural and interstate differences in the nutritional problems among the elderly. Over-nutrition rates are lower in the elderly as compared to the persons (both men and women) in the 40-59 year age group. Persons in the ≥ 80 year age groups have lower prevalence of over-nutrition as compared the persons in 60-79 year age group. Part of this may be due to the increasing problems with dietary intake in older persons. It is also possible that the lower prevalence of over-nutrition in the older persons may to some extent be also due to the fact that they might have been normally nourished when they were in the 40-59 age group and so have lower

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over-nutrition rates while currently 40-59 age group have a higher prevalence of over-nutrition due to ongoing nutrition transition.

It is well known that there are massive inter-state and urban rural differences in the socio-demographic, nutrition and health status of the elderly population. Ready access to state specific data on numbers of the elderly, socio-economic, nutrition and health status of the elderly will enable states to:

- ➢ draw up state specific plans for programme implementation (PIP);
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