CHAPTER VI

SUMMARY AND CONCLUSIONS
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This chapter is a synthesis of all previous chapters. It concludes brief summary of the earlier chapters followed by conclusions and suggestions.

Introduction

Health is a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity. The task of looking after the welfare of human beings, who are in need of physical, financial and emotional care, is a discouraging one for planners and policy makers especially in a country like India, where the majority of the population is barely able to live above the poverty line. One aspect of this welfare consists in providing affordable and adequate health care for the elderly, by taking into account the pathologies of old age. A second issue is the socio-economic vulnerability of the elderly (in addition to the physical problems of old age). Disease profiles are generally linked to the socio-economic status of the individual in an economy like India. The National Policy on Older Persons was designed to address the issues relating to the elderly, however it does not give specific policy recommendations on the health of the elderly.

Chronic illness is endemic among many older people in the developing world, where technical advances in medicine have far outrun the social and economic development which in industrialized countries have enabled disease-free living. Nutritional status and impaired functional ability among the elderly, especially from poorer sections of the developing countries, must receive attention. Research results have shown a relationship between health and nutritional status in the elderly. Body fat content and its distribution are helpful in assessing the risks for cardiovascular disease, hypertension, diabetes and dyslipidaemia. Therefore, information on body composition is essential in delineating the nutrition and health relationship.
Global self-ratings of health are among the most commonly assessed and simplest measures for ascertaining an individual's health. Self-rated health has been shown to be an independent predictor of survival among the aged. Several studies on nutritional status and health among the elderly population have been conducted from the different corners of the globe. To the best of our knowledge, only two studies (one from North India: Bombay slums and second one from South India: poorer sections of Andhra Pradesh) are available on the elderly population's perception of self-rated health and nutritional status from the Indian context. But no studies are available on tribal populations, though their size is also increasing significantly on par with general populations. Hence there is a dire need to understand the health status of the tribal populations and such measures will pave the way for the construction of welfare measures to get rid of them from the diseases.

Aims and Objectives

The present study aimed to assess the relationships between nutritional status with functional ability, well-being and self-rated health in a free living elderly subjects from two major tribal communities of Andhra Pradesh, i.e., the Sugali and the Yanadi tribes of Andhra Pradesh, India.

The specific objectives of the study are

1. To assess the demographic characteristics of the two tribal communities.
2. To assess the nutritional status based on anthropometry among the elderly subjects.
3. To assess the self-rated health among the elderly.
4. To know the functional ability and well-being among the two tribes.
5. To know the prevalence of diseases.
6. To assess the relationship of self-rated health to functional ability and nutritional status among the elderly and:

7. To compare the results between the study tribes to develop suitable strategies for their well-being.

Material and methods

Sample

The study population comprises 300 Sugali's (138 males + 162 females) and 300 Yanadi's (134 males + 166 females) aged ≥60 years from the Kadapa District of Andhra Pradesh, India. The Sugali and Yanadi tribes are the predominant tribes in Andhra Pradesh. The inclusion criteria for the present study is subjects who are 60 and above years of age, and willing to give consent to participate in the study. The exclusion criteria is who are bedridden and under treatment for chronic diseases and have no known terminal or mental illnesses. The study was approved by the ethics committee of our Institute. Informal consent was taken from all the subjects before participation.

Electoral roles were checked to ascertain the age of the participant to establish the correct age. Each person was interviewed individually and subjects were encouraged to give free responses to narrate their life events. Additional support is taken from the local key person in the respective tribes to ascertain some of the information like age etc. Age was confirmed by matching (random) with ration cards or their identity card issued for election purpose. In the present study the sample is further divided into three age groups for comparison i.e., 60-69 yrs age group, 70-79 yrs age group and ≥80 yrs age group.
Methods of data collection

Standard anthropological methods like structured questionnaire, and in-depth interviews were used to gather data. Interviews were conducted individually in within the homes of the older subjects who were more or less home bound due to disability or ill health. Structured questionnaire was used to get information regarding their general physical health and social-demographic information about living arrangement, marital status and their educational attainment.

Each interview took nearly one and half hours and extensive information was collected on demography, problems related to old age, nutrition, individual health history in the present and past was obtained from each subject, along with data on health aids (spectacles, hearing, walking and dentures), level of education, physical activity etc. The physical assessment included height, sitting height, weight and circumferences of waist and hip, and skin fold thickness at triceps, subscapular and abdomen. Body mass index (BMI) was calculated as weight in kg/height in meter square (kg/m²) and waist hip ratio (WHR) was calculated in cm as waist circumference/hip circumference. Further, the subjects were enquired about their self-rated health (SRH), activities of daily living (ADL), well-being (WB) and memory and cognitive function (MCF).

Statistical Considerations

Statistical analysis was carried out via SPSS-15.1 and alpha levels were set at P<0.05. Subjects were classified into three age groups: 60-69, 70-79 and ≥80 years. Differences in mean values between sexes and tribes were analyzed using the students “t” test and differences between age groups and categories of self-rated health were checked by analysis of variance. Bivariate relationships between self-rated health with
anthropometry and other factors using Pearson correlation coefficients and \( \chi^2 \) analysis. Further, multivariate logistic regression was fitted to investigate the relationships that affect an individual SRH. The variables entered into the model were: BMI, and scores of MI, ADL, WB and MCF controlled for age.

**Analysis, Interpretation and Conclusions**

For convenience of interpretation, data were categorized into three broad age groups, which are 60-69, 70-79 and 80+ years. Suitable comparisons were attempted between the age groups.

- No formal education is recorded in females and around 3 percent of males received formal education in males of both the tribes. Agriculture is the predominant occupation in Sugali's and Agricultural labor is the predominant occupation in Yanadi tribe.

- Both the tribes are facing financial constraints towards affordability of food and clothing, housing and health treatment. Both the tribes grossly expressed that the income is insufficient for living.

- Elderly subject's individual feeling indicates that more than 50% in the Sugali tribe are feeling loneliness while it is only 36 to 37 percent in Yanadi elderly. 41 percent of females and 54 percent of the males in Sugali tribe opined that their health is not good, but the same is recorded as 35 percent in males and 29 percent in females of the Yanadi elderly. Similar percentages were observed for 1) Children do not stay with them 2) Children visit as often 3) No body to help 4) No body to prepare food 5) Not able to move around 6) No body to help when you are sick.

- Around 70 percent of the Sugali elderly are facing vision problem, while this is only 50 percent in Yanadi elderly. Around 35 percent of the elderly males
and females of Sugali's and 27 to 22 percent of the Yanadi elderly are using the spectacles in their day to day life. Similar percentages were observed for hearing impairment, walking, dentures and chewing. More than 50% of the Sugali and Yanadi elderly are meeting support to procure health aids on their own.

- Around 90 percent of the elderly subjects of both tribes felt no need of help in exerting 1) get out of the bed 2) go to toilet 3) bathing 4) walk inside the room 5) to take food and dressing.

- 50 percent of the females and 61 percent of the males in Sugali tribe, and 63 percent of the elderly Yanadi expressed that they are suffering with some kind of perennial health problem. Blood pressure, arthritis, chest diseases, paralysis, body pains, diabetes, are the significant ailments in both the tribes.

- More than 60 percent of the elderly people in both the tribes are taking three meals per day. Around 15 percent of elderly reported that their appetite is bad. Rice is the staple food for both the tribal groups (100%). Meat consumption is noticed around 70 percent. Vegetable consumption is noticed to an extent of 82 to 90% in Sugali's, while it is around 74% in Yanadi's. 82 percent of the males and 11 percent of the females in Sugali tribe are smokers, on the other hand only 66 percent of the males and 8 percent of the females in Yanadi tribes are smokers. 70 percent of the females and 80 percent of the males in Sugali tribe consume alcohol, and the same is noticed to an extent of 75 percent in males and 36 percent in females of Yanadi tribe. Chewing is higher in female sex of both tribes.

- Only 7 percent of Sugali elderly and 7 percent of the elderly males and 15 percent of the elderly females in Yanadi tribe rated their self health as good.
Sugali males are taller than Yanadi males, while there is no difference in height between females. No statistical significance difference observed in weight and BMI between tribes, however, female possess higher body mass index than to males (p<0.05). There is no significant difference in WHR between the tribes, on the other hand males continued to possess higher WHR than to their female counterparts. Triceps, subscapular and abdomen SFT is higher in Yanadi elderly than to Sugali elderly. In both the tribes females possess higher TSFT, SSFT and ASFT when compared to males (p<0.05).

A significant decrease in height, sitting height, weight and hip circumference is noticed with advancement of age in both males and females of Sugali and Yanadi tribes (p<0.05). Body mass index shown a significant decrease with age except in Yanadi females. The decrease in WHR is significant only in Yanadi females (p<0.05).

Even though the mean scores for ADL and MI failed to show significant difference between tribes, but higher values are characterized by Sugali tribe. Mean scores for ADL, MI, WB and MCF tended to fall in the very old age group in both sexes of Sugali and Yanadi tribes (P<0.001). In all the above scores males are dominating females.

An increase (p<0.05) in sitting height, weight and BMI from poor to good SRH is noticed in both the tribes. WHR failed to show statistical significant difference from poor to good SRH, excepting Yanadi males. Some of the skinfold thickness shown an increased mean values from poor to good SRH in Sugali elderly males and females only.

Mean ADL, WB, MI and MCF scores are constantly increasing from poor to good self-rated health in all the groups (P<0.001).
A linear association is observed for anthropometry and functional well being in both the tribes except in WHR in Sugali males, BMI in Yanadi males and MUAC in Yanadi females. Positive correlations are observed for anthropometry and functional well being in both the tribes.

In Sugali males, subjects with the higher BMI were 1.886 times (CI= 1.346, 2.641) better when comparisons were made between good vs fair SRH, and the odds ratio increased to 2.484 times (CI= 1.680, 3.672) when comparisons were made between good vs poor self rated health. In Sugali females subjects with the higher BMI were 1.793 times (CI= 1.408, 2.284) better when comparisons were made between good vs fair SRH, and the odds ratio increased to 1.878 times (CI= 1.450, 2.433) when comparisons were made between good vs poor self rated health. In Yanadi males, subjects with the higher BMI were only 1.723 times (CI= 1.204, 2.467), better when comparisons were made between good vs fair SRH, and the odds ratio decreased to 1.565 times (CI= 1.056, 2.318) when comparisons were made between good vs poor self rated health. In Yanadi females subjects with the higher BMI were 1.461 times (CI= 1.179, 1.810) better when comparisons were made between good vs fair SRH, and the odds ratio increased to only 1.557 times (CI= 1.228, 1.975) when comparisons were made between good vs poor self rated health. Similar Odds ratios with minor fluctuations are observed for other anthropometric and functional well being variables.

Illiteracy and low economic status is big jolts for the elderly in the maintenance of their lives. Thus these insults among the aged is observed to be an independent in meeting the demands of old age. Economic position is directly linked with health maintenance. Both the tribes are in dire need of physical as well as
economic support to meet their needs. Feeling self reported health as poor itself is an indicator about the status of the tribal elderly.

The most common health problems is vision impairment among these tribal elderly. It acts an obstacle not only for earnings but also to perform their routine tasks, which further demands services of the physical attendant. Improved sanitary conditions may fletch a lot in the maintenance of the good health. Inadequate Governmental support in the health maintenance on one side and elderly ignorance about the concessional facilities on the other hand driven this group vulnerable to some of the ailments as noticed in the present study. Though there is no gross deviation in nutritional status between the tribes, yet Sugali's are some what better than Yanadi's. However nutritional interventions may uplift their health.

There was a trend of those at the older age group to be unable to undertake all the tasks in their general life. Since the ability for physical movement and to manage other things could be related self reported health. The present findings on Sugali and Yanadi elderly reveal that well-being and BMI are strongly associated with self rated health. Hence, improved self-perceptions of health may have a positive effect on one's well-being and independence. This study highlights the physical dimension of health problems of elderly individuals. To improve quality of life, refinement of poor health status through affordable health service for disease screening and better management of illness, nutritional improvement and greater health awareness may improve the nutritional and health status of the tribal elderly.
Suggestions

As suggested often (Bagga: 1999) generalization about the socio-economic, relative health status of the elderly needs to be done carefully. The problem of the elderly in India was not serious in the past because the numbers were small and the elderly were provided with social protection by the family network. But owing to relatively recent socio-economic changes, aging of the population is emerging as a problem that requires consideration before it becomes critical. However, a few studies indicate that family and relatives still play an important role in providing economic and social security for the elderly. But most of these studies relate to the middle and higher socio-economic classes where the elderly own the means of production and have sufficient economic resources not to be affected adversely. Those in the lower levels of the social strata, who constitute the majority, will need social and economic support.

1. The elderly can not be considered as a homogenous sub population with a uniform set of needs that can be determined simply based on the age groupings (This is needed because age groupings are associated with differential health and economic problems, the magnitude for the older groups being more.)

2. There is need to understand variability within and between populations (inter and intra community) to understand regional variations in the elderly economic and health problems.

3. There is an urgent need for health awareness and economic upliftment programme for Indian elderly especially for tribals, who’s percentage is also likely to increase on par with other population groups.)
There is a need to provide them knowledge for self-recognition and acceptance of health problems and various concessional facilities available for them including old age pension programmes. Promotional education via media to raise awareness of the benefit of early diagnosis, and on healthier lifestyle, are the messages which need to reach our elderly and their families, in all segments.