CHAPTER V

Summary

and

Conclusion
SUMMARY AND CONCLUSION

The twentieth century has witnessed the surge in the elderly population across the globe due to demographic shifts, improved socio-economic conditions and control of infectious diseases. Growing elderly population presents a new and serious challenge and will continue to have significant economic and social ramifications. One of the objectives of aging studies in the realm of human biology is to identify the sources of variation in health and disease. It is often unknown whether certain phenomena related to chronological age are universal and inevitable or pathological or attributable to certain environmental or pathological or other factors.

Several studies have documented high prevalence of coronary heart disease (CHD) in elderly. Multiple risk factors for the development of CHD have been identified based on the results of large epidemiological studies. The commonly recognized risk factors for CHD are, male sex, cigarette smoking, diabetes mellitus, hypertension, hyperlipidaemia, sedentary life, family history of CHD, obesity and type A personality but opinion about the degree to which they contribute to the development of CHD is divided. During the past quarter century, the mortality from CHD has steadily declined. This decrease has been attributed, at least in part, to successful modification of some coronary risk factors, such as, hypertension. Yet, despite this general decline, the proportion of elderly individuals dying from CHD has actually risen, while this may be partly attributable to the aging of general population. Most of the patients followed up in the large epidemiological studies are middle aged. The impact of traditional risk factors for the development of coronary
heart disease in the elderly is however uncertain. Clinical, epidemiological and experimental studies indicate association between trace elements and CHD.

Demographic shift in India has taken place within the last generation. Serious research on this process of aging is still in infancy. Population based data are necessary for accurately ascertaining the aging trends. As majority of people spread in rural areas and hence selection of rural population would truly represent the epidemiological characteristic of total population. Epidemiological transition which is characterized by aging and changing life styles which culminate in an epidemic of hypertension and coronary heart disease. However, there is paucity on age and sex specific prevalence of CHD in the population aged 65 years and older. Typically, small numbers of elderly have enrolled in epidemiological studies and investigators have been forced to aggregate older persons into broad categories such as a grouping all those aged 60+ years and older in to one stratum. But, care is taken in the present study in including the aged in two age cohorts, namely 60-70 and 71-80. Although several studies have reported on trace elements in children and adult populations but little is known about Zn, Cu and Mn metabolism in elderly. The role of trace elements in CHD is given considerable importance in the present study. Keeping in view of these, present study has been conducted in 9 rural areas of Chittoor district in Andhra Pradesh, namely, Chittoor, Yellampalli, Marrimanda, Pitchatur, Puttur, Neeru vai, Dodlamitta, Karvetinagaram and Tapovanam.

Those who are 60 years and above (i.e., 60+) and upto 80 years are considered as aged. The technical aspects of the subjects with regard to their regional distribution (rural), level of socio-economic conditions, nature of diet and physical
activity and personal habits are subjected to uniformity. Data on age, sex, anthropometry, glucose, blood pressure, lipid profile, trace elements and heart disease profile, are collected from 100 males and 140 females. Stratified sampling technique is used to collect the data. Standard methods have been employed following Bhasin and Singh (1971) for taking anthropometric measurements; Weiner and Lourie (1981) for anthropometry as well assessing skinfold thicknesses; Rose et al (1986) (blood pressure); Trinder (1969) (serum glucose) Allain et al (1974) (total cholesterol), Weibe and Smith (1985) (HDL-C) Fossati and Prencipe (1982) (triglycerides) Friedewald (1972) (LDL-C), Wilson and Spiger (1973) (VLDL-C) and Perkin Elmer Manual (1982) for trace element analysis.

The major results are summarised as follows

1. The prevalence of CHD is slightly lower in females than males. As no significant difference is observed in both sexes, this could be due to chance only.

2. The number of risk factors between subjects with or without CHD has not shown significant difference. However the median of risk factors with CHD in both sexes is four (4). Whereas, it is 3 in males and 2 in females for those without evidence of CHD. However, no significant difference is observed in the prevalence of risk factors in subjects with or without CHD in both sexes excepting in females in case of BMI.

3. Age, sex, stress, diabetes, zinc, copper, HDL parameters are considered as independent correlates for CHD in both sexes of elderly and examined the relationship between these two using logistic regression analysis. Significant association of copper and CHD is observed and further shown that low copper levels may increase the susceptibility to CHD in elderly.
4. WHR is positively correlated in females with HDL-C and LDL-C/HDL-C ratio. Higher levels of WHR are associated with higher levels of total-C, LDL-C, VLDL-C and higher percentage of CHD prevalence in both sexes.

5. Zn has shown positive relationship with DBP, copper with, HDL-C, Mn with SBP, DBP, LDL-C/HDL-C and Cu/Mn ratio with DBP in males have shown statistically relationship. This shows that trace elements influence individual risk factors.

Thus, the present analysis of Coranary heart disease (CHD) among the aged and its association with anthropometric, physiological and biochemical parameters through biocultural perspectives, help us to locate the present health status of rural population of Chittoor District, Andhra Pradesh, which may also serve as representative to larger population. The analysis also brings out a new dimension for understanding the association of coronary heart disease and the role of trace elements in disease management. Thus, the results emphasize the need for further comparative studies on specific or cross-cultural populations in India.

In conclusion, besides traditional risk factors, trace element deficiency plays an important role in causation of CHD by influencing individual risk factors. Hence, besides improving dietary intake of trace elements, control of infection, balanced diet, correction of gastro-intestinal problems, meticulous use of drugs, containment of nutritional disorders, will go a long way in boosting healthy life in elderly.