A grey wave is rapidly setting on the world with the rate of growth of aging population exceeding that of the general population. According to World Health Organization, what was an extra ordinary achievement for the last century will be one of the greatest challenges for the present one – ensuring quality of life of an exceptionally large elderly population (WHO, 2000).

Currently there are 605 million people in the world aged 60 years and above and this figure is expected to soar up within the next 20 years – a 75 percent increase in elderly population compared to less than 50 percent increase in the global population as a whole (Department of Social and Economic Affairs, 2009) To put in simpler terms, today almost one in ten people are over 60 years of age. By 2050, the figure will be higher than one in five (Help Age International, 2010).

The proportion of elderly is rising more rapidly in developing countries than in developed ones. WHO projections (2002) indicate that by the year 2020, more than 70 percent of the world’s elderly people will be in developing countries, with the absolute numbers exceeding 700 million compared to 318 million in developed regions.

UN (2010) reports also indicate that although the percentages of older persons are significantly greater in more developed regions, the number of older people is increasingly larger in the less developed regions. Over the last half century, the number of people aged 60 or older, increased globally by an average of 8 million persons every year. Of this increase, 66 percent occurred in less developed regions and 34 percent in more developed regions. As a result, the proportion of the world’s population over 60 living in less developed regions rose from slightly over half (54%) in 1950 to 62 percent in the year 2000. Figures indicate that by 2050, nearly four fifths of the world’s older population will be living in less developed regions.

A notable aspect of the global ageing process is the progressive demographic ageing of the older population itself. It is projected that in 2050, six countries will have more than 10 million people aged 80 years or above- China (99
million), India (48 million), USA (30 million), Japan (17 million), Brazil (10 million) and Indonesia (10 million). Together they will account for 57 percent of all those 80 or over in the world. (UN, 2010)

This enormous increase in elderly population all over the world is due to the reduction in mortality rates resulting from prevention of infectious diseases, improved hygiene and sanitation and overall social development and living standards. The decline in mortality rate was accompanied by an equally sharp fall in birth rates. Ultimately the demographic transition leading to population ageing is actually a shift from high mortality / high fertility to low mortality / low fertility. As fertility declines and more people live longer, the relative weight of society’s main dependent groups – children and older persons- is gradually shifting towards older persons.

The demographic shift of global elderly has immense implications for India as the Indian society has been undergoing rapid transformation under the impact of several factors like industrialization, urbanization and education. The demographic trends visible in India in this respect are that the death rate declined to 29.1 per 1000 and life expectancy increased to 59.4 years, whereas the birth rate declined to 29.5 per 1000 in 1991 (Registrar General India, 2010). As a combined effect of these changes, the proportion of elderly in India is growing at a rate faster than the general population.

India has nearly seven percent of its total population shuffling across the line that defines the elderly with seventy six million aged above sixty (Census India Report, 2001). By 2016, it is expected to rise to 114 million constituting 8 to 9 percent of the total population. The Indian aged population is currently the second largest in the world to that of China leading with 100 million elderly. The life expectancy at birth which was 70 years in 1990 is projected to reach 82 years by 2020 (IIPS, 2009). From 1961 to 2001, there has been a 200 percent increase in the population of older adults in India.

The challenges for elderly are more complex in the Indian situation as indicated by the rising old age dependency ratios (defined as the number of persons aged 60 and over divided by the working population of age 15 to 59 years). Registrar General of India (2010) predicted Indian old age dependency ratios to
reach 14 by the year 2016 and WHO (2002) predicts that globally there will be 40 old people economically dependent on the 100 working people by the year 2025. Such large dependency ratios require policy responses to improve the health of older persons thereby increasing their ability to contribute longer to the society.

Another challenge presented by the demographic transition is ‘feminisation of ageing’ – projections indicate that 51 percent of the elderly population would be women by the year 2016. This is due to the greater life expectancy at birth and at older ages for women than for men (WHO, 2008). Vulnerability among the elderly also depends on their living arrangement since the elderly are less capable of taking care of themselves compared to young persons. The significance of living arrangement among elderly becomes evident when seen in the context of their level of economic dependence also (Rajan Irudaya, 2006). According to 2001 census 33.1 percent of elderly in India live without their spouses. Added to these factors are concerns regarding their failing health.

Remaining self reliant and productive during old age depends on them continuing in good health. Therefore there is urgent need to ensure that older persons remain in good health and play active roles in society. This is imperative especially in developing countries without the capability of providing security schemes to large segments of population.

The most recent findings regarding health status of elderly show that the leading causes of death have shifted dramatically from infectious to non-communicable diseases and from younger to older individuals (Wahlqvist and Flint, 1998). Ischemic heart disease and cerebro vascular diseases followed by respiratory diseases cause a vast majority of deaths occurring at older ages in low income countries. Thus developing countries face the dual challenge of coping with high morbidity and disability rates due to infectious diseases and high rates for the super imposed emerging chronic diseases characteristic of aging societies.

A major survey (NNMB, 2002) on socio economic and health profile of elderly in India covering 5000 households over 8000 villages and 4500 urban blocks showed that 45 percent of both men and women, both urban and rural, reported chronic illnesses. In two other studies (Joshi et al., 2006 and Mehta and Shringarpure, 2000) on older people, virtually everyone included in the study had
multiple symptoms ranging from musculo-skeletal problems, visual defects, central nervous system problems and respiratory problems. In addition 43 percent had some form of depressive illnesses.

These statistics point to the fact that the central challenge of the growing elderly population is indeed their health. A growing body of evidence suggests that there are nutritional components to many of the health problems and preventive nutrition strategies may play a significant role in chronic conditions which do affect independence, quality of life and health care expenditure. Thus, the inseparable triad of nutrition, aging and health seems to be the logical basis for appropriate management of problems of the old that arise due to a host of inter dependent factors.

A review of descriptive epidemiological data from developed and developing countries reveal that chronic health problems can be related to differences in life style patterns and diet in particular (WHO, 2002). Malnutrition among elderly is yet another problem of concern due to the risk factors which may range from decreased functionality, poverty, loneliness, alcoholism, dental problems, medical problems, drug usage and dementia.

Data gathered by the National Nutrition Monitoring Bureau over a period of time on the Indian elderly population showed that under nutrition still continues to be a public health problem in India (NNMB, 2007). Based on NNMB Surveys, Arlappa et al., (2004) also reported a higher prevalence of Chronic Energy Deficiency among elderly than their adult counterparts in India. The proportion of elderly meeting 100 percent of recommended dietary allowances (RDA) for all nutrients were as low as 2.8 percent and only in 4 percent of elderly, the intake of macronutrients and micronutrients were equal to or more than the RDA.

The setting of the present study, the state Kerala, has unique demographic attributes in this context. Kerala has low per capita income as given by official statistics, but with regard to the social development indicators it is far ahead of any other Indian state and stands out among low income countries of the world and is even on par with some middle income European countries (Franke & Chasen, 1993)
Kerala’s credentials are distributed equally across urban-rural, male-female and low caste – high caste populations. In this respect, Kerala outshines the rest of the world. Thus the male-female literary rates are the highest in India, life expectancy for females was higher than males and it is the only state in India in which women outnumber men. This achievement is the result of the greater access that women have to food, education and health care in the state (Sen, 1994).

However, Kerala’s most striking achievement is the attainment of third stage of demographic transition” with lowest fertility and mortality rates, and as a consequence, the state has the largest proportion of elderly in India (10.8%). Kerala is expected to maintain it’s lead with 9.79, 11.71 and 15.63 percent of elderly in 2001, 2011 and 2021 respectively (Tripathi, 1999). The life expectancy of the state is projected to reach 82 years by 2020 (IIPS, 2009). Kerala also has the largest number of old age homes in India (Kerala Ageing Survey, 2004-2005).

The interesting paradox about Kerala regarding the health status of it’s population is that, though it is the most advanced state in India in terms demographic transition with mortality levels close to those of developed nations for the last two decades, the morbidity levels are comparatively higher than anywhere in India (Dilip, 2007). Kerala Ageing Survey (2004-05) conducted among 5013 elderly throughout Kerala, found high incidence of chronic non-communicable diseases and disabilities. At least one form of disability was found among majority (675/1000) of the elderly in Kerala. A health issue of much focus in Kerala is the prevalence of psychological problems including dementia, which afflicts approximately 3 percent of the aged (Menon et al., 2006). According to estimates, Kerala’s rates compare with that of developed countries in this regard.

However comprehensive information on health and nutritional status of elderly in Kerala is scanty. Though a few studies (Rajan Irudaya, 2007, 2003; Moli, 2004) have examined the sociological aspects regarding the ‘Geriatric boom’ in Kerala, investigations to assess the nutritional profile and related factors of elderly have not been carried out. ‘Malnutrition free Kerala’ a programme launched in 2005 by Government of Kerala included the geriatric group as targeted beneficiaries for nutrition support, but not much has been implemented at the field level till date. The large scale NFHS surveys have also focused on women and
children as the vulnerable groups. So little information is available regarding nutritional profile of elderly in Kerala.

Among the districts of Kerala, Ernakulam district has the largest number of old age homes as per the available data. (HelpAge India, 2005) The trend is obviously increasing as revealed by statistics. Kochi is the largest urban agglomeration in Kerala under the administrative purview of Ernakulam district. The state of Kerala, particularly the area of Kochi, is an ideal setting to study the determinants related to aging, given the dramatic population aging phenomenon evident in this region.

Thus, when the world is anticipating the emergence of elderly as the most important population group in this century, a micro level study on dietary habits, morbidity pattern, psychological status and functionality in relation to overall health and nutritional status will aid in giving direction to policy decisions regarding the aged in Kerala. The present research aims to address this issue. Keeping in view the existing lacunae on our body of knowledge regarding the elderly in Kerala, the present study entitled “Nutritional Profile of elderly in Kochi, Kerala” was undertaken with the following specific objectives:

1. To elicit information on socio-economic background, psychological status and quality of life of the elderly
2. To appraise the functionality and morbidity profile of elderly subjects
3. To ascertain the nutritional profile of the selected elderly with respect to their anthropometry, biochemical status, clinical profile and dietary intake
4. To study the feasibility of use of the non-invasive tool, Mini Nutritional Assessment (MNA), among elderly in Kochi to define nutritional status and
5. To elucidate factors associated with nutritional status of the elderly population.