Chapter-1

INTRODUCTION
1.1 **Context of the study**

‘Graying of the Nations’ is a worldwide demographic phenomenon raising questions on the well-being and health care facilities and resources available to the elderly population. While thinking about global ageing the following figures must be kept in mind- the number of persons aged 60 years and older was 605 millions in the year 2000 whereas it is projected to reach 2 billion by 2050. Thus for the first time in human history over 60 population is going to be larger than the population of children (0-14 years). An estimated 279 million older population of the world (which is 60% of the world’s older population) now live in developing nations. By 2030 this number is projected to become 690 million (71% of the older population of the world) (Robnet & Chop, 2010).

Population - ageing process is determined by the stage and rapidity of demographic transition. Ageing is determined by both fertility and mortality reductions. Early and quick initiation of demographic transition will lead to rapid ageing of the population. In general these transitions are universal and seemingly irreversible. This process has not yet been completed for many developing countries. Studies show that fertility transition from the traditional high levels to modern low levels is the primary cause of population ageing. The decline in mortality rate also plays an important role in population ageing. Though these reductions in fertility and mortality rates has been one of the major goals of civilisations mankind is not in a position to rejoice about this favourable demographic set up. Instead mankind is once again rocked by an age quake (Chakraborti, 2004). The situation can be called as a “demographic time bomb”.
Indian scenario of ageing

According to census 2011 data the total population in India is 1210.6 million. People between the age group of 60-99 were 56.5 million during 1991 census and now in 2011 it is 103.2 million. People over 100 + is 0.6 million. Presently, India has around 90 million elderly and by 2050, the number is expected to increase to 315 million, constituting 20 percent of the total population. Three-fourths of the elderly live in rural India, of which 48 percent are women and 55 percent of them are widows. Nearly 70 percent of the rural elderly are dependent on others and their health problems increase with age. In addition to problems of illiteracy, unemployment, widowhood and disabilities, older women in India also face life – long gender based discrimination, resulting in differential patterns of ageing of men and women.

The Global Report on Ageing in the 21st century [2012] reinforces the observations made in India that there is multiple discrimination experienced by older persons, particularly older women, including in access to jobs and health care, subjection to abuse, denial of the right to own and inherit property, and lack of basic minimum income and social security (UNFPA & Help Age International, 2012).

Further, the majority of the people at 60 + in India are socially backward and economically poor. In addition there is also extreme heterogeneity in the demographic transition across the states in India. For example, the state of Kerala which had 11 percent of the elderly population in 2001 is expected to have 18 percent by the year 2026, with an absolute number of around seven million elderly. But Uttar Pradesh had only six percent of elderly in 2001 and by 2026 it will have
10 percent elderly population. But the absolute number of elderly in Uttar Pradesh is expected to be thrice that of Kerala.

**Ageing in Kerala**

Kerala is one of the first states to reach an advanced stage in demographic transition. Number of births in Kerala is continuously declining and the youths migrate in large numbers in search of job opportunities due to highest unemployment rate among youth. Thus there is a rapid increase in the number of the elderly within the state (Bhat & Irudaya Rajan, 1990).

A paper on unique ageing scenario in Kerala estimates that the size of the population in the age group of 60 years and above in the state is expected to increase from 33 lakhs in 2001 to 57 lakhs in 2021 and to 120 lakhs in 2061. 40 percent of Kerala’s total population will be the elderly by the year 2061. Of this, 6.7% would be in the age group of 60-69 years; 23.8% in the age group of 70-79 years and 9.1% in the age group of 80 years and above (Krishnakumar, 2012).

Ageing research is not well developed in Asian countries except in Japan. It is partly because of the cultural beliefs of Asians in family values and this makes everybody to think that family is the ultimate provider of care for the elderly. In the absence of institutional support for the elderly in most of the Asian countries, families will continue to take care of the elderly. At the same time family also has its limitations which are becoming evident. Social and economic development undermines the traditional values and number of children who should look after the elderly is less in number.
When the resources are limited the poor elderly will become a burden to their family especially if they suffer from chronic ailments demanding huge health care costs. Negligence of the elderly and poor quality of life are the results of these situations. Even in situations where there are resources available to look after the elderly several psychological barriers have come up resulting in their isolation and poor care of the elderly (Evans, Kiran & Bhattacharya, 2011).

As a solution for such problems we have followed the west in building up old age homes. When funds are a problem quality of care in old age homes become poor. Living outside one’s own family is still a difficult proposition for us. Social status of the aged both in the family and in the society mainly depends on the economic status of them. Low economic status not only reduces the social status but also the health status of the aged.

There are a number of reasons which force the aged to depend on old age homes or destitute homes like-social migration of younger generation, higher education, conflicts in the family, growing individualism, diminishing health of the elderly which reduce their physical capacity to work or earn etc. (Krishnakumar, 2012).

The increase in the number of elderly combined with the disproportionate rate at which they use medical resources, will require that health care providers become increasingly knowledgeable about the needs of geriatric patients and increasingly efficient in the evaluation and management of concerns unique to these patients (Evans et al., 2011).
1.2 Need and significance of the study

Adding life to the years that have been added to life is a significant challenge. But, ageing should not be viewed from a problem perspective alone; its potential must be recognized and realised. In India the revised National Policy for Senior Citizens (NPSC, 2011) recommends eight areas of intervention, namely income security in old age, health care, safety and security, housing, productive ageing, welfare, multigenerational bonding, and enhancing involvement and participation of media on ageing issues. NPSC recognizes that outcome changes such as improvement in quality of life, socio-economic conditions and health of senior citizens can be brought about only through the collaborative efforts of the government, civil society and the private sector.

Nurses are the largest group of health care professionals in any country. By way of the Holistic nature of Nursing, Nurses can effectively involve in the care of the elderly irrespective of the agency they work with (whether government, private or as part of NGO). With ongoing economic development and resulting changes in the structure of family the elderly are left alone to face their deteriorating health status.

This has detrimental influence on the health of the elderly. According to 2011 census Kerala is the topmost state with high dependency ratio of the old (which is 196% of the population) (Census, 2011). Often the medical and social problems of the elderly are over looked and neglected by seeing them as a part of normal ageing. Unrecognized health problems are also more common among the elderly and they are the result of failure to report symptoms, denial of symptoms, under investigation and poor diagnosis by health care providers. Incontinence of
urine, depression-dementia, visual-hearing impairment and locomotor disability are the commonest among them. All these can affect the subjective well being of the elderly, can cause low morale and lead to further depression.

Adding to this burden of frailty and disability the elderly is all the more depressed and feeling lonely due to the fact that helpers are not available to look after the elderly living in their own homes or old age homes. Kerala’s youth are unwilling to take up low-paid or unskilled jobs like functioning as domestic assistants or care giver assistants in institutions. This adds to the amount of neglect, poor quality care of the elderly in households as well as in old age homes. Such a situation demands initiatives for ‘active ageing’. Active ageing aims to extend healthy life expectancy and quality of life for all people as they age, including those who are frail, disabled and in need of care. Measures to help older people remain active are a necessity and not a luxury in all countries whether they are developing or developed. To highlight this issue WHO has also launched its 2012 World Health Day theme as ‘Ageing and Health’ with slogan as “Good health adds life to years” (WHO, 2012).

Regular moderate physical activity in older persons should be part of this healthy life style. Inactive people who became active in old age can still achieve substantial health benefits. Previously inactive older women or men who become active show a marked reduction in overall mortality (from any cause) compared with their sedentary peers.

Frailty and physical disabilities prevent the elderly from active exercises. Most of old age homes do not have any specific arrangements to engage its inmates physically active other than utilising them in household jobs in maintaining the old
age home itself. More over elderly lack initiative to participate in any form of activity due to pain, psychological problems and depression. This shows lack of motivation.

Existing studies have shown an increased prevalence of depression among the institutionalized elderly (Nalini (2006), Gopal et al., (2009), Mathew & Manickaraj (2012), Tiwari et al., (2012), Hsu & Wright (2014)). Life style disorders like hypertension and diabetes are also reportedly high as age advances and they increase the risk of cardiovascular problems in the elderly often coupled with depression.

Even when the diseases are diagnosed, the elderly are put on a lot of medications and poly pharmacy make a definite threat to the general health and well being of the older person. Ever increasing health care costs also adds to the depression of the elderly who do not have sufficient income or any form of financial sources other than the support from old age homes. This is a situation that forces search for inexpensive alternative forms of therapy which will not produce adverse reaction and which is inexpensive.

So far numerous researches on non-pharmacological treatments for those degenerative changes have been published. Among those non-pharmacological treatment laughter therapy is a noticeable psychotherapeutic intervention in depression and dementia of the elderly. Laughter Yoga is one kind of therapy recently developed by Dr. M. Kataria, an Indian physician. Laughter produces psychological as well as physiological benefits. For the past one and a half decade the Laughter Club concept of laughter exercise has been introduced to many populations, but it has found its greatest favour so far with the elderly. Laughter has
been purported to improve immune function, increase pain tolerance, and decrease stress response (Mc Donald (2004), Wilson (2005), Mc Ghe (2006), Kataria (2011)). But therapeutic benefits of laughter on psychosocial variables require further clinical evidence. The present study is an attempt in this line.

Kerala with its unique features of ageing is the state with maximum old age dependency ratio. Within the state the districts that are having highest problems are the district of Pathanamthitta followed by Alapuzha and Kottayam (Irudaya Rajan, 2000). Of the three Kottayam is having the highest number of old age homes. Therefore it would be apt to study the elderly inmates of old age homes of Kottayam District to see the psychosocial and physiological benefits of laughter yoga. No such reported study from Kottayam District has come to the notice of the researcher. Methodologically robust data need to be generated as clinical evidence for supporting laughter yoga. If sufficient research evidence can be generated Nurses and other professionals working with elderly clients in India can make use of this inexpensive and non-invasive therapeutic technique. This will help to improve the physical, psychosocial and spiritual well being of their elderly clients.

Looking after the elderly with dementia, depression or chronic disabilities is a challenge to the care givers. In most of the situations care giver role strain was found to be very high. This can result in burn out and low quality care which in turn will affect the elderly. While working with extremely vulnerable population like the elderly, nurse-patient interaction is critical to the patient’s experience of dignity, self-respect, sense of self-worth and well being. These factors can significantly reduce depressive symptoms among the elderly. A context-specific interpersonal process like caring needs much of interpersonal sensitivity. More over positive staff
engagement was significantly related to patient’s interest, motivation to participate and pleasure derived from the therapy (Haugan et al. 2013). Laughter therapy will further have a positive effect even on the care givers.

1.3 Statement of the problem

The degenerative changes of physiological and psychological functions of elderly people come with age. Population ageing, with wide implications for economy and society in general is a major demographic issue for India in the 21st century. Presently India has around 90 million elderly 12.6% of which is contributed by Kerala State alone (Census of India, 2011). Due to increased dependency of these people some of them are forced to take services from old age homes. Depression is one of the most common and most treatable of all mental disorders in older adults. It is a major health concern that is life threatening if unrecognized and untreated. In all countries measures are needed to help older people remain healthy and active. Laughter yoga is a simulated laughter technique which can offer both physiological and psychological benefits even to frail and disabled elderly who cannot practice other forms of physical exercises due to their physical limitations. This technique is without much adverse effects and it practically lacks contra indications. However, current empirical data for the benefits associated with simulated laughter is much more limited and further well designed research is warranted especially with the elderly living in old age homes. The health care community is yet to accept laughter yoga as a healing tool within the complementary/alternative medicine. In order to offer patients the benefits of laughter, health care professionals must be willing to break loose from conventional therapeutic constraints and they themselves must be able to laugh (Mc Donald 2004). Thus the present study is on the effect of Laughter
Yoga on selected psycho physiological variables among the elderly clients residing in the old age homes of Kottayam district.

1.4 Objectives

1. To find out the effect of “Laughter Yoga” on morale of the elderly clients living in old age homes of Kottayam District.

2. To find out the effect of “Laughter Yoga” on depression among the study subjects.

3. To determine the effect of “Laughter Yoga” on subjective well-being among the study subjects.

4. To identify the effect of “Laughter Yoga” on selected physiological variables among the study subjects.

5. To identify the relationship between selected baseline variables and psychological study variables.

1.5 Null Hypotheses

1. There is no significant difference in morale of the elderly clients living in old age homes undergoing Laughter Yoga (experimental group) and not undergoing the same (control group.)

2. There is no significant difference in depression among the control group and experimental group.

3. There is no significant difference in subjective well being among the control group and the experimental group.
4. There is no significant difference in the Respiratory Rate among the control group and the experimental group.

5. There is no significant difference in the Resting Heart rate among the experimental group and the control group.

6. There is no significant difference in the Blood Pressure between the experimental group and the control group.

7. There is no significant difference in Oxygen Saturation among the experimental group and control group.

8. There is no significant difference in Peripheral Skin temperature between the experimental group and the control group.

9. There is no significant difference in Electrocardiogram between the experimental group and the control group.

10. There is no significant association between the selected baseline variables and the psychological study variables.

### 1.6 Inclusion/Exclusion Criteria

- Elderly clients who are willing to participate in the study and certified by a physician or nurses working in the old age home for physical fitness to participate in Laughter Yoga.

- Elderly clients who are seriously ill or suffering from a contagious disease or from a debilitating illness will be excluded.
1.7 Operational definition of key terms

1. **Laughter Yoga**: This is a laughter therapy which combines Simulated laughing techniques with breathing exercises and developed by Dr. Kataria’s school of laughter yoga in Mumbai, India.

2. **Selected psycho physiological variables**: The physiological variables are defined as measurable physiological changes occurring in the study subjects. Following are the physiological variables selected for the study:-

   1. **Resting Heart Rate** which will be measured in a subject who has rested for 10-15 minutes.

   2. **Blood Pressure**, systolic and diastolic readings of blood pressure.

   3. **Electrocardiogram**-The graphical representation of the cardiac conduction of the subject.

   4. **Respiratory Rate**- Rate of respiration of the subject.

   5. **Oxygen Saturation**- A reading of Oxygen Saturation of peripheral blood per pulse oxymetry which is measured by a standardized patient monitor attached to the finger tip of a subject.

   6. **Peripheral Skin Temperature**- The measurement of forearm temperature using a temperature probe on the subject.

The physiological variables 1-6 will be measured by a standardized BPL patient monitor.
The Psychological Variables

1. **Morale**: Moral and mental condition of the subject as measured by Philadelphia Geriatric Centre Morale scale.

2. **Depression**: An emotional condition either neurotic or psychotic characterized by feelings of hopelessness inadequacy etc., which is measured by Geriatric Depression Scale and Hamilton Rating Scale for depression.

3. **Subjective well-being**: The subjective report of a state of well-being by the study subject which was measured by WHO well-being index.

### 1.8 Methodology in brief.

The following instruments will be used for the study:

1. Baseline data sheet.


5. WHO (Five)-Well-Being Index (1998 version) (Psychiatric Research Unit, WHO Collaborating Centre in Mental Health).

6. BPL EXCELLO/ULTIMA patient monitor model No, ULTIMA PRIME with Serial No.DNTA2C 1653 (for measurement of physiological variables).

The ethical issues will be taken care of. Researcher is a certified Laughter Yoga therapist. The researcher will train laughter leaders from among the care givers of the old age homes to conduct sessions with her. Pre test scores will be obtained by using above mentioned scales administered by the investigator for the
experimental group and control group. The researcher will also monitor the physiological variables of the subjects prior to the administration of Laughter Yoga. Laughter Yoga will be administered for the time duration of 30 minutes every day for a period of 8 weeks in a cluster. Subjects will be evaluated on the above mentioned psycho physiological variables at the end of 2\textsuperscript{nd}, 4\textsuperscript{th}, 6\textsuperscript{th} and 8\textsuperscript{th} weeks of laughter yoga. Physiological variables will be measured again after a resting period of 30 minutes biweekly. The control group will not receive any treatment. The measurement will be repeated for the control group during the same time interval with the experimental group.

1.9 Scope of the Study

The study results will help to support Laughter Yoga as an alternative therapy for depression which is a therapeutic modality without much contraindications or adverse effects. The method is inexpensive and acceptable to the patients as well as care givers. Laughter can be proved as a method of exercise for the elderly who cannot otherwise do much of physical activity due to the degenerative changes and resulting disability. This will be an effective technique to improve the subjective well being and morale of old age home inmates. This technique can be administered almost daily to reap its joyful fruits.

1.10 Summary

This chapter has dealt with the context of the study, need and significance, problem statement, objectives, null hypotheses, inclusion/exclusion criteria, operational definitions of key terms, methodology in brief and the scope of the study.