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Neurophysiological Framework for Managing Pain and Physical Dysfunction in Knee Osteoarthritis : A New Paradigm

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ABSTRACT

Various researchers in the past tried to explain the neurophysiological and pathophysiological mechanism of pain and dysfunction in knee Osteoarthritis. Both involve a combination of mechanical, cellular, and biochemical processes. These degenerative changes often leads to knee pain, muscle dysfunction, proprioceptive impairments, abnormal stress loading, impaired neuromuscular coordination, sensorimotor dysfunctions resulting in altered weight bearing pattern, and impaired neuromusculoskeletal integrity. Although there are many techniques available for their management, but till date there are no specific guidelines. Hence, the present article aimed at understanding the neurophysiological basis of pain and physical dysfunction to formulate specific treatment guidelines. After going through extensive literature, it can be concluded that pain and dysfunction in knee osteoarthritis can be understood and managed in better manner only by incorporating neurophysiological principles. These principles must be applied while formulating specific treatment guidelines.

Key Words : Osteoarthritis; Proprioceptive impairments, Neuromusculoskeletal integrity; Muscle dysfunction, Neuromuscular coordination.

Osteoarthritis is a degenerative disease characterized by damage to the articular cartilage, changes in subchondral and marginal bone,

synovitis and capsular thickening, typically affecting weight bearing joints, especially knee and hips (Dixon & Howe, 2005),

It is more prevalent among females than males (Sharma, 1999) and is characterized by a range of disorders of clinical and pathological outcome that results in structural and functional abnormalities of synovial joints (Minor, 1994). Knee osteoarthritis (OA) has high prevalence all over the world and is one of the commonest causes of disability in the community, imposing a major personal and socio-economic burden (Hurley *et al.*, 1998 and Nuki *et al.*, 1999).

Osteoarthritis of the knee is characterized by muscle dysfunction (Hurley, 1999) proprioceptive impairments (Tomoyuki, 2003), impaired ability to generate force quickly during voluntary muscle contraction, neuromuscular incoordination microklutziness results in impulsive joint loading and an increased heel strike force) and reduced functional performance which adversely affects the quality of life (Hurley, 1989 & 2003; Jefferson *et al.*, 1990 and Rabinowicz & Jacqueline, 1990).

The signs and symptoms may range from acute pain to chronic pain typically worse with weight-bearing, swelling, spasm, stiffness, diminished knee range of motion, decreased muscle strength and endurance. This in turn significantly limits the functional abilities such as squatting, rising from floor, standing from chair, walking, climbing stairs (Kidd, 2006) and ramp, using local public transport system. Hence, all domains of domestic and occupational performance areas like self care, work / occupation and leisure gets severely affected.

Knee osteoarthritis mainly affects the elderly population but may appear as early as 35 years of age. The prevalence of radiographic changes in knee OA increases according to age (Felson *et al.*, 1987). Early degenerative changes of knee are characterized by gradual loss and focal destruction of cartilage, development of bony spurs and cysts at the margins of the joints, osteophyte formation, and reduced joint space.

Pathophysiological changes

Degenerative disease of the knee joint consists mainly of three categories i.e. conditions that block normal synchronous movement,

conditions that produce abnormal pathways of motion, and conditions that cause stress concentration resulting in changes to articular cartilage.

The pathophysiology involves a combination of mechanical, cellular, and biochemical processes. Biomechanical stresses known to affect the articular cartilage and subchondral bone, and biochemical changes in the articular cartilage and synovial membrane are important in its pathogenesis. The strong association between age and osteoarthritis may be best explained by age-related changes in the matrix composition and a decrease in chondrocyte function and responsiveness to stimuli. These changes can interfere with continued internal remodeling, maintenance of the tissue, and loss of cartilage. There is an increased risk for cartilage degradation and breakdown resulting in decreased ability to protect the bone surfaces. Also thinning of the synovial fluid occurs frequently.

The abnormal repair process leads to the formation of osteophytes and subchondral cysts, as the disease progresses. This finally results in roughening of the bony surface and osteophytes formation interfering with normal joint movement (Ganevia & Burke, 1992). These degenerative changes ultimately culminate into abnormal stress loading, altered weight bearing pattern, and gait deviations.

Neurophysiology of knee pain in osteoarthritis

The knee pain is a major symptom of knee osteoarthritis and its presence and severity are important determinants of disability. The osteoarthritic pain may vary from throbbing, burning, hot or scalding to deep boring in nature. The synovium in a knee joint has an extensive neural network in the somatic and autonomic nervous systems (Radin *et al.*, 1991). The synovial membrane and sympathetic vasomotor fibers play an important role in mediating throbbing, burning, hot or scalding pain, while deep boring pain indicates the raised intraosseous pressure and demonstrates venous congestion.

Muscles have important sensorimotor functions for controlled joint movements. Pain has been shown to reflexively inhibit muscle activation around knee. Hence it may be detrimental to either the motor (movement, strength, activation) or sensory (proprioception, balance) components of muscle function. It has been suggested that the major causes of

osteoarthritis related knee pain are greater mechanical strain (over capsule, ligaments, tendons, synovium, periosteum, and muscle), inflammation (and subsequent release of chemical mediators), abnormal muscle contraction, muscle weakness, effusion, and abnormalities in the excitability of the nerve endings located in and around the joint tissue (Brucini *et al.*, 1981; Burch & Love, 1960 and Puett & Griffin, 1994).

The origin of pain in knee OA still remains unclear, cartilage is aneural but other joint tissues possess pain receptors which are potential sites of pain sensation. However, the mechanism of pain has been attributed to neuro-physiological and biomechanical factors. OA pain may originate in several articular or para-articular tissues supplied by sensory nerves. The mechanism for pain production may be irritation of articular nerve endings by chemical substances (such as inflammatory mediators) or mechanical irritation (mechanical overload / abnormal stress loading), neurogenic inflammation or raised intraosseous pressure. This pain sensation is carried via partially myelinated A delta (δ) and unmyelinated C fibres to the cerebral cortex. In addition to activation of peripheral pathways, psychological stress, depression and sleep deprivation may amplify pain attributable to local joint condition involving supraspinal mechanism in osteoarthritic pain production.

Pathomechanics of impaired proprioceptive acuity and its functional correlates

Articular damage may result in loss of motor control, motor neuron excitability, and proprioceptive acuity (Hurley & Scott, 1998). Apart from force generation, muscle is also an extremely important organ of proprioception. Proprioception may be termed as the conscious and unconscious awareness of body position, movement and forces acting on the body (Hurley *et al.*, 1998). It requires the integration of sensory information from peripheral proprioceptors (muscle spindles, golgi tendon organs, articular and cutaneous mechanoreceptors), vision and the vestibular apparatus. At any age, input from the peripheral proprioceptors is the most important sensory component contributing to proprioceptive acuity. Moreover, muscle spindles are the peripheral proprioceptors that impart the most important proprioceptive information. Therefore, impairment of muscle function may not only cause muscle

weakness, but also affect proprioceptive acuity (Hurley *et al.*, 1998). Proprioceptive acuity relies on accurate sensory input and central integration for which sensory information from muscle spindles is vital (Aniss *et al.*, 1990; Gandevia & Burke, 1992 and Hurley *et al.*, 1998). Therefore, factors which adversely affect muscle spindle sensitivity will decrease proprioceptive acuity. The sensitivity and acuity of peripheral proprioceptors can be investigated by assessing joint position sense (JPS) (Hurley *et al.*, 1998). Therefore, emphasis should be on active reproduction of limb position that requires muscle contraction, which increases the fusimotor drive which heightens muscle spindle sensitivity and hence proprioceptive acuity.

Muscle dysfunction in context to knee osteoarthritis

It has been observed that neuromuscular joint protection requires proprioceptive input and motor output. In knee OA the quadriceps muscle group (main stabilizer around knee joint) weakness or atrophy reduces the amount of protective force generated at the knee joint. In addition, however, if the speed of muscle contraction is also affected and slower, then it will also take longer for protective and stabilizing muscle contraction to occur. The ability to generate force quickly during voluntary muscle contraction is affected in the quadriceps (Kaufman *et al.*, 2001). This knowledge about muscle dysfunction (Hurley, 1999) may be useful in understanding the etiology of knee osteoarthritis and clinical decision making process.

Assessment of pain and functional disability

In response to pain and stiffness, patients with knee OA tend to become more sedentary, which further induces muscle atrophy and functional performance limitations (Kidd, 2006). and adversely affecting the quality of life. Various instruments and scales like Western Ontario McMaster Universities Osteoarthritis Index (WOMAC), Arthritis impact measure Scale (AIMS), Health Assessment Questionnaire (HAQ), Functional Status Index (FSI) and Composite Indian Functional Knee Assessment Scale (CIFKAS) have been used to assess Pain and functional status in patients with knee OA (Batra *et al.*, 2010). Among these WOMAC is a tridimensional self administered questionnaire, but the patients of different educational backgrounds may overrate or under rate their functional abilities. CIFKAS is another

culturally relevant and contextually appropriate tri dimensional therapist administered and self reported (Individual performance based) assessment instrument for subjects with knee OA. The instrument is divided into three major domains of functional performance. The first is pain domain which targets each knee separately and includes assessment of severity of pain during physical and functional ADL activity. The second is functional disability domain and measure the functional disability status during physical and functional ADL activity. The third is psychosocial domain measuring the psychosocial aspects of disability related to functional performance and socio-cultural integration.

Management of knee osteoarthritis

The management of knee osteoarthritis is quite challenging in order to provide relief to the patients. Presently, available intervention strategies demonstrate tunnel view and mainly focuses on relief of pain, spasm, improving joint range of motion, muscle strength and endurance [via knee immobilization, stretching, knee strengthening (isometric & isotonic) exercises in extreme ranges, therapeutic massage, passive modalities such as moist-heat packs, ultrasound, diathermy (thermotherapy), and electrical stimulation etc. Various researchers have different opinion about the way the most appropriate therapy in management of knee OA (Michael *et al.*, 1992; Ettinger, 1994 and Petersson *et al.*, 1997).

The relationship between weight bearing exercise and osteoarthritis is complex. In some cases, the wear and tear incurred during weight bearing exercise may accelerate degeneration (Marks *et al.*, 1995). This is particularly likely in people genetically predisposed to osteoarthritis, or is already suffering from a joint defect and take part in activities, such as running, which impose high impact forces on the joints. On the contrary, many experts claim that exercise provides some protection against the development of osteoarthritis by helping to reduce body weight, improve muscle tone and strength, and increase flexibility (Szoek *et al.*, 2006). In addition, exercise stimulates the secretion of synovial fluid which lubricates and nourishes the joints. Non-weight-bearing exercise, especially swimming, is often promoted as treatment for mild forms of osteoarthritis. However, those suffering from joint

disorders should avoid exercise which puts great stress on the joints and cause further damage.

Existing guidelines for the management of knee OA are not specific and do not provide significant estimates of treatment effect on functional abilities or differentiate between experts opinions. The available literature emphasizes on the need for specially designed and individually tailored intervention strategy while caring for affected joint and slowing down the disease progression (Hochberg *et al.*, 1999). So, the treatment strategy should emphasize on early intervention and incorporate neurophysiological and biomechanical principles within functional context while formulating an intervention strategy approaches for patients with knee OA and improve their functional performance, abilities, and quality of life. The objective is to produce evidence-based recommendations for the management of knee OA, and guide health-care professionals involved in the management of knee OA. This Framework (neurophysiological and biomechanical) may serve as guiding tool for the management of pain and functional disability in patients with knee OA.

An Insight into specific intervention strategy (Based on Neurophysiological and Biomechanical principles):

The specific intervention strategy is a specially designed strategy aimed to alter / modify / correct neuro-pathophysiological, and pathomechanical changes. It incorporates selective neurophysiological and biomechanical procedures and techniques to influence / affect muscle dysfunction (Hurley, 1999) and neuromusculoskeletal control & integrity.

Goals of specific intervention strategy are symptomatic relief of pain and spasms, promote relaxation, enhance proprioceptive and kinesthetic awareness, optimize neuromuscular control and coordination, and enhance the functional performance by improving interaction dynamics, thereby improving quality of life.

The specific intervention strategy can be mainly divided into three phases such as:

- a) Preparatory phase
- b) Dynamic adaptability phase
- c) Functional mobility (Dynamic environmental interaction) phase

Preparatory Phase : This phase aims at managing pain, swelling, edema and tenderness. This phase incorporates positioning, elevation, facilitating weak muscles, promoting muscle recruitment within pain free sub maximal contraction (Farina *et al.*, 1998) and range in small increments (with no added resistance), and enhancing neuromuscular control and coordination. This is achieved by incorporating neurophysiological principles such as: autogenic inhibition in combination with minimal joint traction, irradiation, muscle reinforcement and temporal and spatial summation and techniques such as: contract-relax within pain free range. Also coupled joint movements of knee, hip & ankle is initiated using the above mentioned (both direct and indirect) approach.

Dynamic adaptability phase : This is the most critical phase for incorporating neurophysiological procedures and static and dynamic components of muscle function (muscle contraction) (Hurley, 1999). This phase aims at developing or modifying neuromuscular control and coordination, enhancing muscle recruitment and co activation, balancing and counteracting opposing and deforming forces hence improving functional joint stability (Hurley, 1999) and proprioceptive and kinesthetic awareness.

This is achieved by incorporating positioning mechanics (such as maintaining optimal structural alignment), promoting structural integrity, improving joint mobility and soft tissue pliability, selective muscle stretching (muscle length adaptation), adding various task components, promoting joint unloading, selective muscle recruitment of knee, hip and ankle (in sub maximal range with graded resistance with intermittent rest periods), promoting (enhancing), interplay between mobility and stability, and enhancing static and dynamic balance and coordination. This minimizes muscular dysfunction modifying / correcting faulty (altered) weight bearing patterns and improving functional status (Hurley, 1999).

Functional mobility (Dynamic environmental interaction) Phase

The goal is to restore knee joint neuromuscular control as far as possible and maintaining movement dynamics within functional context. This phase incorporates neurophysiological techniques such as reversal of antagonist, hold-relax, contract relax at varying angles and ranges

with graded resistance. This phase aims at modifying neuromuscular control and coordination, promoting functional joint stability, balance between joint loading and unloading, promoting static and dynamic balance, equilibrium and neuromuscular control; hence, improving muscle dysfunction and faulty / altered weight bearing patterns and minimizes pain and functional disability within functional context (Hurley, 1999).

An overview of specific components of the technique involved:

Recruitment of muscles affected via: intermittent stretch, isometric contraction of knee, hip and ankle musculature (graded resistance at varying angles with intermittent rest intervals), Isotonic (concentric and eccentric) contraction co-contraction (with associated minimal joint traction) and by adding resistance in a graded manner to recruit more motor units and strengthen the response (Hurley *et al.*, 1998).

Sensorimotor experiences such as Manual contact : It is to provide appropriate sensory input through pressure over agonistic muscle groups (Hurley, 1999).

Procedures to enhance dynamic adjustment range: Adequate Selective stretch (with associated minimal joint traction) to augment the motor response and promote / enhance dynamic adjustment range at end ranges can also be used.

Procedures to enhance / promote coupled motions of knee, ankle and hip: As a single muscle is not solely responsible for a single motion component, individual muscle is augmented by other related muscle which in turn augments the action component of related muscles. Hence, the concept of synergy is incorporated for strengthening specific muscles. This promotes the muscles to work as different synergist (i.e. stabilizing synergist, neutralizing / counteracting synergist, co-joining synergist) either directly or indirectly.

So this technique involves neurophysiological and biomechanical principles with an objective to produce evidence-based recommendations for the management of knee osteoarthritis and emphasize on research-based evidence rather than expert opinion and provide future guidance to health-care practitioners involved in management of knee OA.

Conclusion

Knee osteoarthritis may result in loss of neuromusculoskeletal integrity, and limited functional abilities. So, it is important to understand the underlying neurophysiological and biomechanical contributors to the disease process in order to formulate an intervention strategy. This should serve as a new paradigm for managing pain and physical dysfunction in patients with knee osteoarthritis thereby improving their functional disability (within the environmental context) status and quality of life.

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Physical Activity and Functional Competence in the Elderly

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ABSTRACT

The present study was planned to examine the patterns of functional competence in sample of community dwelling elderly in the age group of 50-59:60-69:&70-79. They were individually tested by using Disability scale. Analysis showed that with increased age, functional competence faced by them decreased. Based on results the extent of disability in the performance of different ADLs and IADLs and task specific patterns of disability (PBFC) were analyzed. The implications of the findings were drawn.

Key words : Functional Competence, Elderly, Disability, ADL, IADL.

Ageing is often perceived as decline in physical vigor to perform certain activities for daily living. Functional autonomy is a core condition of successful ageing. Functional competence is usually conceptualized as the ability to have self-care, self-management and to carry out physical activities of daily living. The functional status of the elderly is intricately dependent on many factors including mental health status, physical health status, ability to perform basic daily activities, on locomotor status, cognitive status, social support status, ability to cope with the life situation and proper use of leisure time. The process of ageing implies a sequence of gradual impairments that occur across the life span that form the basis of decreasing functional competence. But it looks as

though functional competence and aging are largely intertwined. The risk of prolonging life with dependency and poor functional competence may not reflect a good quality of life.

Functional limitations are restrictions in performing fundamental physical activities. These include activities such as difficulty in ambulating or climbing stairs. Disabilities, on the other hand, are functional limitations placed in a social context. Disability has also been defined as the gap between an older individual's ability to perform a task and the demands imposed by that task (Verbrugge, 1990). A widened gap typically results in an increased difficulty in performing day-to-day tasks, inability to maintain self-sufficiency, and, ultimately, in a loss of independence (Ostir *et al.*, 1999). Health in old age is a product of several other factors too like locality, gender, and age. The aged individuals are exposed to greater health risks. In India, decline in functional competence in the elderly is regarded as a normal happening that is associated with an advancing age.

Therefore, an attempt was made through this study to assess functional competence to perform various daily activities (viz., competence to carry out physical activities of daily living, instrumental activities of daily living, competence in performing some prescribed motor tasks, and self perception of one's functional competence)

Plenty of documented evidence in the western researches is available on functional limitations in later years of life, and factors related to it since most of their health care policies are data driven. In India, very few attempts were made to study this important topic that has policy implications. The periodical reviews on gerontology and geropsychology (Ramamurti & Jamuna, 1984, 1993, 1995, 1999) indicate that few studies are available on the patterns of disability in the elderly in the Indian context.

Sample

A sample of 300 community dwelling elderly men and women of rural and urban areas of Rayalaseema region from the age groups of 50-59, 60-69, and 70-79 years were drawn by using a multi-stage sampling technique. The sample details are given in Table 1. The subjects were identified on the basis of census reports and also house-to-house survey. The subjects without chronic illness and those cognitively intact were included in the study.

Table I : The distribution of the sample for the main study

Age Groups	Urban		Rural		Total
	Men	Women	Men	Women	
50-59	25	25	25	25	100
60-69	25	25	25	25	100
70-79	25	25	25	25	100
Total	75	75	75	75	300

Tools and Method

The Telugu version of disability scale (Ramamurti et al., 1998) was used to assess disability in different areas viz., ADL, IADL, & PBFC. The test was individually administered at interview sessions depending on mutually convenient timings. The protocols were analyzed age-wise, gender wise and locality wise. Simple t tests were used to test the mean differences in functional competence between the groups. Results on the functional competence of various socio-demographic groups' viz., age, gender, and locality were compiled.

Results and discussion

The outcome variable in the present study is functional competence. It was assessed through the measures viz., physical competence (PHC) through certain ADLs and IADLs, and performance based functional capability (PBFC).

Table II : Physical competence in activities of daily living (ADLs), Instrumental activities of daily living (IADLs), Performance based functional competence (PBFC) in different age groups

S.No.	Sub-groups	N	Mean (σ)	't' value
1.	ADL			
	a. 50-59	100	10.79 (2.29)	5.06*(a-b)
	b. 60-69	100	12.53 (2.56)	
	c. 70-79	100	15.51 (2.98)	7.57*(b-c)
2.	IADL			
	a. 50-59	100	9.11 (1.86)	7.80*(a-b)
	b. 60-69	100	11.69 (2.72)	
	c. 70-79	100	15.20 (3.87)	7.40*(b-c)
3.	PBFC			
	a. 50-59	100	12.14 (1.70)	11.41*(a-b)
	b. 60-69	100	16.21 (3.11)	
	c. 70-79	100	19.92 (5.80)	5.63*(b-c)

* P < 0.01

Functional competence is the major concern for many during older age. Maintenance of functional competence leads to overall well being of the person. Age wise means show that with increase of age the disability faced by the aged groups also increased.

Firstly, the mean scores in physical competence measures (ADLs, IADLs) among various socio-demographic sub groups viz., age, gender, and locality groups were examined (Table II, III & IV). Higher score on the ADL measure indicate low functional competence. The data on ADLs (Table - II) indicate that there are differences among 50-59 (Mean=10.79), 60-69 (Mean=12.53) and 70-79 (Mean=15.51) age groups. The scores in gender groups differed (Table - III) significantly.

The results (Table - II) reveal that the mean functional competence in basic activities of daily living (ADL) in 50-59 years was low compared to 60-69 and 70-79 years age groups. It only indicate that as age advances, the degree of limitations in performing, functional incompetence

also increases. In gender groups (Table - III) female elderly reported limitations in performing ADLs ($t=2.58^*$) which means low functional competence. In locality groups (Table - IV) rural elderly reported higher disability in ADLs (but not significantly different) than urban elderly.

The data on functional limitations in instrumental activities of daily living (IADLs) (Table - II) indicate that 50-59 age group (Mean=9.11) differed significantly with 60-69 (Mean=11.69) and 70-79 (Mean=15.20) age groups. However, there were no gender (Table - III) and locality differences (Table - IV) in the performance of instrumental activities of daily living.

It is clear (Table - II) that as age increases there is an increasing difficulty in the functional capability of IADLs. In gender groups (Table - III), female elderly reported slightly higher IADL disability (but not statistically significant). Also the rural residents scored high in IADLs (Table - IV) indicating low functional competence compared to their urban counterparts.

Table III: Physical competence in the ADLs, IADLs and PBFC gender sub-groups

Sl. No.	Sub-Groups	N	Mean (σ)	't' value
1.	ADL			
	a. Male	150	12.46 (3.01)	2.58*
	b. Female	150	13.42 (3.44)	
2.	IADL			
	a. Male	150	11.77 (3.53)	1.01@
	b. Female	150	12.22 (4.14)	
3.	PBFC			
	a. Male	150	15.52 (4.99)	1.99@
	b. Female	150	16.68 (5.05)	

@ Not Significant ; * $P < 0.01$

The data on limitations in performance based functional competence (PBFC) indicate (Table - II) that the subjects in 50-59 age group (Mean=12.14) differed significantly from 60-69 (Mean=16.21) and the

70-79 (Mean=15.20) age groups. However, there were no significant gender (Table - III) and locality differences (Table - IV) in the performance based activities of living.

Table IV : Physical competence in ADLs, IADLs and PBFC in two locality groups

Sl. No.	Sub-Groups	N	Mean (σ)	't' value
1.	ADL			
	a. Rural	150	13.10 (3.36)	0.82@
	b. Urban	150	12.78 (3.17)	
2.	IADL			
	a. Rural	150	12.06 (3.86)	0.26@
	b. Urban	150	11.94 (3.65)	
3.	PBFC			
	a. Rural	150	16.06 (5.31)	0.12@
	b. Urban	150	16.13 (4.78)	

@ Not Significant

Implications of the study

The study showed the role of demographic variables such as age, gender, locality, functional capability in different measures of functional competence. It implies that these special concern groups need better attention in welfare programmes especially in health care services. Since experience of low functional competence was high among rural residents and many elderly were without any formal education, and no access to health care services, they must be targeted in health interventions to create greater health awareness, promote physical fitness and healthy aging. The State should come up with a comprehensive Life Span Health Policy considering the special health needs during old age.

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Evaluation of Degree of Depression in Geriatric Population – A Community Study

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ABSTRACT

The paper is base on door to door mental health survey conducted in Veeriyampalayam village in Coimbatore district in Tamil Nadu. The purpose of the study was to ascertain the prevalence of depression in elderly persons by direct interview with caregivers. The CES – D (Clinical Epidemiological Scale) and the EASI (Everyday Ability Scale for India) were administered to the elderly subjects in order to analyze the depression. The totals of 91 elderly subjects (46 males and 45 females) of the age group above 65 of both sexes were selected for the study. Out of 91 subjects 20 were depressed and 71 subjects were non depressed. The most of the depressed elderly were married, uneducated, unemployed, and lived in a joint family and depended on their family members for their financial needs. All the aspects of health status, life style, life satisfaction and mental state together reflect the multi-dimensional nature of quality of life in an elderly population. Geriatric mental health problem with respect to quality of life often remains neglected. This study shows the need of a well-designed epidemiological investigation to evaluate the awareness and prevalence of depression in elderly.

Key words: Depression, Geriatric population, Community Survey, Disability status, Family status.

Depression is a common mental disorder that presents with depressed mood, loss of interest or pleasure, feelings of guilt or low self worth, disturbed sleep or appetite, low energy and poor concentration. Depression is a common problem among older adults.

Studies have found that about 15% of those over age 65 experience symptoms of depression that cause them distress and make it hard for them to function. In late life, depression affects primarily those with medical illness. Depression not only makes a person physically feel ill, but actually makes physical health worse and increases mortality.

A number of different kinds of depression or mood disorders can afflict older adults. These illnesses affect how people feel about themselves and the world around them. They can influence every aspects of person's life, including appetite sleep, levels of energy and fatigue and interest in relationships, work, hobbies, and social activities of course, every one feels blue or low sometimes, but a depressive illness is not just passing blue mood. It involves serious symptoms that last for several weeks and make it hard to function normally (Alexopoulos, *et al.*, 2001).

People suffering from depression often show distorted thinking. Everything looks bleak to them and they hold extremely negative views about themselves, their situation, and the future. Trapped in their pessimism, they obsess over their problems and blow them out of proportion. Feeling hopeless, they may even start to see suicide as their only way out. Depression is expressed differently according to one's age, sex, and culture. An awareness of these differences helps to ensure that the problem is recognized and treated accordingly (Carlat *et al.*, 1998).

Prevalence of Depression

Understanding the prevalence of depression has important implications for both health planning and risk factor epidemiology (McGrath *et al.*, 2004). Prevalence rate refers to the presence of an illness in a population in a given time and includes both newly developing cases and ongoing cases of illness. For chronic conditions prevalence rates portray a better estimate of disease occurrence because at any given time there are more ongoing cases than newly developing cases. Depression is prevalent among older adults, and it has serious consequences. More than half of cases represent a first onset in later life. Although suicide rates in the elderly are declining, they are still higher than in younger adults and are more closely associated with depression. Depressed older adults are less likely to endorse affective

symptoms and more likely to display cognitive changes, somatic symptoms, and loss of interest than are depressed younger adults. Risk factors leading to the development of late-life depression likely comprise complex interactions among genetic vulnerabilities, cognitive diathesis, age-associated neurobiological changes, and stressful events (Amy Fiske, *et al.*, 2009)

The global burden of disease study of the World Health Organization and the World Bank has shown that depression is one of the most common and limiting disorders worldwide. Further, due to the high direct and indirect costs incurred by this disorder, depression is an important public health issue (Murray *et al.*, 1997)

Depression is common in late life, effecting nearly five million of the 31 million Americans aged 65 and older. Both major and minor depression are reported in 13 per cent of community dwelling older adults, 24 per cent of older medical out patients and 435 of both acute care and nursing home dwelling older adults. Major depression occurs in at least 1 per cent to 3 per cent of the general elderly population (Cole *et al.*, 1996) and an additional 8 per cent -16 per cent has clinically significant depressive symptoms. There has been considerable debate concerning the outcome of depression in the elderly compared to mild age sufferers. The National Institute of Health Consensus Panel on depression stated that in late life depression causes sufferings and burdens families and institutions providing care for the elderly by disabling those who might otherwise be able-bodied. Most research on geriatric depression to date has focused on chronicity, relapse and recurrence.

Late - depression has a pernicious outcome. Data from 12 studies conducted both in primary care and in community secondary care were synthesized into a meta analysis that showed that after 2 year, 21 per cent of elderly depressed patients had died and among survivors, almost half remained depressed (Mathers *et al.*, 2005).

Studies of depressed adults report that those with depressive symptoms, with or without depressive disorder, have poorer functioning than non- depressed adults and their functioning is comparable to or worse than non-depressed adults with chronic medical conditions such as heart and lung disease. In addition to poor functioning, depression

increases the perception of poor health, the utilization of medical services and health care costs (Unutzer *et al.*, 1997).

These findings suggest that depression in elderly community subjects is a serious problem. Old age is associated with lack of strength, inability to feel pleasure, loneliness and bitterness. In the past, some societies guaranteed power, honor and respect to the elderly. However, in modern society, which is consumptive and instantaneous, the elderly are seen as a social burden, always receiving benefits and not offering anything in exchange. It affects their quality life, increasing the economic burden due to its direct and indirect costs and can lead to suicidal tendencies.

Even though depression is a treatable disorder; treatment is being more effective, only if we find the pathophysiology thoroughly in the initial stages. Up to date, how depressive symptoms arise remains unclear. The prevalence of depression in general population in various parts of the globe has so far been reported in few literatures. To the best of our knowledge, none of the reports in the literature stating the prevalence of depression in geriatric population living in rural area of Coimbatore district of Tamil Nadu. Therefore, to evaluate the prevalence of depression in geriatric community, the present study was undertaken.

Method

Sample

The age group of the geriatric population selected for the study was above 65 years. The study was carried out in Veeriyampalayam village situated in the Coimbatore district. There were 200 families lived in village. The total population of village is about 3,000. The totals of 91 elderly persons of the age group above 65 of both sexes were selected for the study. In order to identify the population above 65 years, the voters list was collected from the Panchayat union board office, Kalapatti, Coimbatore. The Study phases were divided into the following phases.

Preparatory Phases

During the initial 5 days, the field workers were trained extensively at Vazhikhatti, The mental Health Care Research Centre by Dr. Selvaraj,

Consultant Psychiatrist who trained the field workers to identify the population with depression.

Case Detection Phase

The case detection scale written in Tamil, contained questions which lead to the identification of depression. The scale was prepared in consultation with psychiatrists, who made necessary additions and alterations. Their views were incorporated in the final scale. The sensitivity and specificity of this screening scale was assessed and found to be highly satisfactory. Reliability and validity were tested and the scale was found suitable for use in field settings.

Collection of socio demographic details

Door to door survey was conducted to ascertain the prevalence of depression in older persons by direct interview with caregivers. The field workers visited every sampled house hold and collected the socio demographic details using the questionnaire.

Administration of EASI and CES-D

The CES – D scale defined as the Clinical Epidemiological Scale for Depression was administered to the older person in order to analyze the depression. The EASI scale (Everyday Ability Scale for India) was administered by interviewing a family member or a person who knows the older person well to analyze the ability. The survey was conducted with the help of a team of volunteers from Dr. N.G.P. Arts and Science College, Coimbatore.

Psycho-counseling

After collection of required information, we found out the older people with depression, for whom a psycho counseling was provided through psychologist. A meditation class was also arranged after counseling based on symptom severity.

Statistical Analysis

All the values are presented as average mean $\pm$ SD. One way ANOVA was used to arrive at the statistically significant changes associated with various treatments. Statistical significance 1 per cent ($p < 0.01$) and 0.1 per cent ($p < 0.001$) protection levels were used for comparison. Statistical tool Sigma Stat v3.5, Systat Software, Inc. USA was used.

Results and Discussion

Prevalence Status of Depression in Total Geriatric Population

Ninety one older person of the age group above 65 were subjected to depression survey and the observation was present in table 1.

Table 1 : Psrevalence status of Depression in total geriatric population

Particulars	Male	Female	Total	Percentage
Elder people	46	45	91	8.6
Depressed People	13	7	20	21.9
Non depressed people	32	39	71	78.02

The survey revealed that out of 91 selected subjects of above 65 years, 20 (21.9%) person were found to be depressed, among whom, 13 were males and 7 were females. About 71 (78%) were found to be non-depressed, among whom, 32 were males and 39 were females. The rate of depression was found to be higher in males when compared to females. The rate of non depression was found to be higher in females when compared to males.

The CES-D scale was administered by a team of volunteer to identify the people with depression. The total CES-D score of above 14 was found to be depressed and below 14 were found to be non depressed. The average CES-D for both depressed and non depressed peoples were given in Table 2.

Table 2 : The average CES-D score for both depressed and nowdepressed people

Particulars	Male	Female	Total
Elder Person	14.02	13.8	13.91
Depressed Person	18.8	18.2	18.5
Non Depressed Person	12.5	12.6	12.5

From the above survey it was revealed that the average of CES-D score for total geriatric population is 13.9. The average CES-D score for depressed elderly persons were found to be 18.5. The average CES-D score was increased in depressed elderly persons when

compared to non depressed elderly persons. The average CES-D score for non depressed elderly persons was found to be 12.5. The average CES-D scores for non-depressed elderly persons is less than depressed elderly persons. The CES-D score was increased in males when compared females. This shows that the rate of depression was high in males.

Disability Status in Geriatric Population

In this study disability was categorized as no disability, mild disability, moderate disability and severe disability. To check the ability of the elder peoples EASI scale was administered. According to this scale the score 0 is considered as no disability. The score 1 - 4 may be considered as mild depression. Score 5 - 6 may be considered as moderate disability and score 5 - 8 may be considered as a severe disability. The disability status for total geriatric population was given in the Table 3.

Table 3 : Disability status in total geriatric population

Type of disability	Male	Female	Total	Percentage
No Disability	28	16	44	48.3
Mild Disability	11	24	35	38.46
Moderate Disability	6	4	10	10.98
Severe Disability	0	2	2	2.19

The above table shows the disability status for total geriatric population. The present study reveals that out of 91 peoples 44 people have no disability. This shows that disability is not common in late life. When compared to males the rate of disability was high in females. About 38.4 per cent of people have mild disability and 10.9 per cent of people have moderate disability. Only about 2 per cent people having severe disability.

Socio-economic Status

Family status is one of the factors that causes depression. According to this study, family status may be categorized as extended family, nuclear family, joint family, living alone and relative's home. The family status of total geriatric population is given in table 4.

Table 4 : Family status of total geriatric population

Family Status	Male	Female	Total	Percentage
Extended Family	3	3	6	6.5
Nuclear Family	8	7	15	16.4
Joint Family	25	31	56	61.5
Living alone	9	4	13	14.2
Relative's Home	0	1	1	1.09

In the present study, the family status of depressed elderly persons reveals that about 62 per cent of elderly are living in joint family and 16 per cent live in nuclear families. Only 1 per cent of the total sample were living in relatives' home. This reveals that rate of depression increases in elderly persons who are living in joint family. Especially the rate of depression increased in male subjects. This shows that elderly males due to abuse or torture in the family suffer from depression. The rate of depression found decreased in nuclear families. Only 1 per cent of subjects were found to be living alone.

The present study also reveals the marital status for total geriatric population was found to be 80.2 per cent. This shows that most of the peoples are married. Only 2 per cent of the peoples are unmarried and 17.5 per cent of the peoples are widowed. It is observed that the rate of depression is increased in married peoples (80%). Only 20 per cent of peoples are widowed. These peoples may suffer depression because of their loneliness. There is no unmarried subjects who suffered from depression.

The educational status of depressed subjects reveals that 45 per cent of the depressed subjects were found to be illiterates, 35 per cent had elementary education and only 15 per cent of depressed persons have higher education. Only 1 per cent of elder persons with depression is graduate.

Occupational and Income Status

In this study, the occupational status was categorized as unemployment, part time employment, paid full time employment and retired. It was found out that the rate of depression increased in unemployed subjects. 45 per cent of subject were found to be

unemployed in depressed community. About 20 per cent of subject are doing part time employment and 10 per cent were having full time employment.

It was observed in this study that the rate of depression increased in the elderly who are financially dependent on their family. This shows the correlation between the joint family and people who earned money for their family. About 15 per cent of elderly earned their money from paid work.

The other details collected during the survey include the following.

1. Out of 91 people, 22 people having medical illness and 20 of them are taking medicines regularly.
2. 9 members have psychiatric illness in past and now only one person having psychiatric illness.

Conclusion

These findings point to the urgency of improving detection and treatment of depression to reduce suicide risk among older adults.

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Relationship Between Expectations, Life Satisfaction and Diseases Amongst Elderly from Different Social Groups

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ABSTRACT

The family ties in India are strong and overwhelming as majority of the old live with their family members. However, the position of an increasing number of older persons is becoming vulnerable. In the present scenario we cannot take it for granted that the children will look after elderly parents when they need care in their old age. The Indian social system is rapidly under transitions; the structure and functioning of the family is fast changing. The dynamics of interactions, interpersonal relations and communication are changing. In the absence of healthy relations among family members healthy ageing is likely to be a big issue. The healthy communication between elderly and family members (informal care givers) can be reinforced only when we understand the expectation profile of elderly and treatment is provided accordingly. This study was carried out to explore the expectation profile and the gap that exists with a purpose to establish the relationship of expectation, actual treatment and its relationship with life satisfaction and some chronic diseases. The study result has shown a very strong association of elderly expectation with life satisfaction and chronic diseases.

Key words : Family ties, Older persons, Elder care givers, Expectations, Life satisfaction, Chronic diseases.

The family ties in India are strong and overwhelming majority of the old live with their family members. However, the position of an

increasing number of older persons is becoming vulnerable. In the present scenario we cannot take it for granted that the children will look after elderly parents when they need care in their old age. The Indian social system is rapidly under transitions; the structure and functioning of the family is fast changing the structure refers to the type of family and functioning denotes the dynamics of interactions, interpersonal relations and communication. These three dimensions are distinctive features and not interchangeable. Healthy relations among family members grow only when healthy interactions amongst them are deliberately created and reinforced. The transition in all the three components is a serious threat for healthy ageing (Khan, 2004).

We all grow with some expectations. However, the profile of expectation varies with life. Within each stage of life, there are sub-stages. At each sub-stage, the expectations are socially and culturally determined. Generally, in every society behavioural disposition of child, adult and youth are accepted. However, it is not true with the older persons. Because, the expectation matrix of older person is complex and not clear in the society. So we don't know fully what elderly people expect from the family members and how those expectations are fulfilled. Whatever may be reason it appears that the positivity and negativity towards old age are deeply embedded into the productivity. The term productivity which refers contribution to family, ability of new earning, physical, social, emotional, psychological and economic independence and control on the resources of family. Non-productive person is seen negatively and vice versa.

Quality of Life (QOL) term is heard frequently these days, particularly when issues of health, ageing and economics are being discussed. The definition and measurement of quality of life has been comprehensively developed by Cummins (1997) - "Quality of Life is both objective and subjective, each axis being the aggregate of seven domains: material well-being, health productivity, intimacy, safety, community and emotional well-being. Objective domains comprise culturally relevant measures of objective well-being. Subjective domains

comprise domains of satisfaction weighted by their importance to the individual". With subjective quality of life established as a valid and useful social indicator, it then becomes important to better understand this measure by considering the psychological processes that contribute to an individual's satisfaction with different areas of their life.

Life satisfaction is accounted by many factors but the social support may be one of the most crucial determinants for life satisfaction in elderly life. Older people often feel alienated, neglected and marginalized and helpless. Many men and women in their old age 'feel lonely' even in the midst of people. They express that they do not have people with whom they can relate themselves to pour out their woes and get emotional support. As person grows older and older they gradually lose their cohorts and peers. The longer they live, the more the loss. People with high levels of social support may experience less stress when they confront a stressful experience and they may cope with it more successfully. Social support is conceptualized as social embeddedness and emotional support that demonstrates that individuals are valued. Supportive interactions and the presence of supportive relationships in people's live play major role in their emotional wellbeing and physical health (Latha, 1998; Sharma, 1999; Dalal, 2001). Psychological well being remains the main focus. Myers and Diener (1995) refer to life satisfaction as one of the three key aspects of psychological well-being, the others being positive and negative affect. Life satisfaction stands together with the affective elements to yield a relatively comprehensive picture of psychological well being (Diener *et al.*, 1999), which depends on several factors. Chirkv *et al.* (2005) found 'culture-fit' is positively associated with life satisfaction. Adjustment to cultural demands is essential for psychological well-being and life-satisfaction. But cultures are diverse and dynamic social systems and not static monoliths (Bandura, 2002). Cultural changes are inevitable and tend to create new demands for retired elderly to adjust with it. The area of concern is how the elderly people adjust themselves; where do they engage themselves and how much they feel satisfy with the life of retirees. What sort of

interactional profile do they developed within the family and outside. The major problem of loneliness possibly leading to several emotional and social problems is very much related to the nature of engagement.

Loneliness is popularly viewed as a relative deficit in social relationship with others in the environment. Russell *et al.* (1980) defined "loneliness" as the relational deficit reflecting interpersonal and social relationships that the individual evaluates as quantitatively inadequate or too few in numbers. However, elderly experience about loneliness is devastating to social and emotional health. The elderly people desire to be part of social network and inability to be part of a social network and lack of friends in old age results in the experience of loneliness.

Exhaustive review of literature, particularly research studies however do not answer some questions related to the expectations from the family members and how does it affect the life of elderly. The research efforts are needed to explore how much the expectations of the elderly contribute to the problems? What could be the expectation profile of old people? In what way it contributes to the problems like cardiovascular diseases, hypertension and diabetes? What basically makes the health of elderly vulnerable? and how much expectations of elderly is fulfilled by the family members across different social groups? The research about expectation profile and actual treatment given to it carries special significance because it is a trainable area. In other words, suitable interventions to bridge the gap between the expectations and the actual treatment is possible. Keeping the review of literature into account this study was conducted with the following objectives :

- (a) To study the expectation profile of elderly from three social groups
- (b) To find out how much actual treatment from the family members are given to the elderly in respect to the expectation
- (c) What is the gap between expectation and reality about their total care ?
- (d) To find out the relationship between expectation, reality and gap between the two and how much it is related to some non communicable diseases.

Method

The present study is cross-sectional study, descriptive in nature. It was conducted in the areas representing different social groups in Delhi. 320 elderly people who were of 60 years of age or more were selected from the study area. Both males and females in equal number were included in the study by multistage stratified random sampling technique.

Out of 12 zones of Delhi, one zone was selected randomly (stage-1). Out of this selected zone, one ward was selected by using simple random technique for the study purpose. Under the Unit Area Method of Property Tax assessment, Municipal Corporation of Delhi has classified colonies into different categories from 'A' to 'G' depending on the cost of the land from higher to lower. This enabled us to identify the different social groups. For this three colonies were selected randomly; one representing high social group, second, middle social group and third, lower social group. The colonies were also selected randomly (stage-3). High social groups basically come from posh colonies, where most of the people own big bungalow/houses. The middle social groups represents people who have possesses middle income group (MIG flats). And lower social income groups comes from the colonies where most of the people have got smallest houses, some of them even possesses LIG (Low income group) house. A total of 320 Elderly divided in three social groups UIG (100), MIG (109) LIG(111) were selected for the purpose of study with equal member of male (160) and females (160).

Research tools

1. **Interview Schedule-** Keeping the objectives in mind, list of a very few expectations prepared. The list could be exhaustive. But this study included only few expectations which were identified in different studies.
2. **Rapid Disease Screening Check-list by A.M. Khan.** Study included Rapid Disease Screening Check-List (RDSCS) by A.M. Khan. This technique was developed by utilizing international classification of 22 diseases, prominent symptoms of each disease was written by one medical doctor and subsequently the same

was put up to a group of 5 medical doctors, who had to verify whether the symptoms listed before each disease were correct or not. All the 5 doctors confirmed that the symptoms listed under each disease are highly correct. Subsequently, one field investigator from medical background was asked to collect data from elderly by using the checklist. Investigator had to collect data only by asking the symptoms and not the disease. The investigator was instructed to collect the prescription of the doctor from the elderly who were undergoing some treatment. This confirmed that the detection of the disease based on symptoms was correct to a very high degree when verified from the prescriptions given by the treating doctor. The correlation between the prescription based diseases and symptoms based diseases was computed and; it was found to have a very high reliability value of 0.92. The present study included only some chronic diseases like cardiac problems, hypertension and diabetes.

3. **Life Satisfaction Scale by N.K.Chadha.** The scale consists of 27 items, both positively and negatively stated, presented in a Likert-scale question frame. The split-half reliability using the Spearman-Brown formula was 0.85. The reliability index was found to be significant at .01 of significance which clearly shows the internal consistency of the scale. And Cronback alpha for the total score was 0.95.

Data Collection It was carried out with the help of few representative of senior citizen, who extended their valuable support in introducing to the elderly of respective colonies. In all, the cases, the data could not be completed in one visit. Researcher being a doctor (in professional dress) had to extend more time with the elderly in terms of checking their B.P. and general health so the time devoted in data collection was more than one could expect.

Findings and Interpretation

Table 1 : Socio-Demographic Profile of the Respondents (N=320)

Variables	Variables	Frequency	Percent
Age	60-69 years	114	35.6
	70-79 years	101	31.6
	8 years or more	105	32.8
Sex	Male	160	50.0
	Female	160	50.0
Marital Status	Unmarried	3	0.9
	Married	317	99.1
Social group	High income group	100	31.3
	Middle income group	109	34.1
	Low income group	111	34.7
Type of Family	Joint family	264	82.5
	Nuclear family	56	17.5

Table 2 : Social group wise literacy level of the respondents (N=320)

Literacy level	Social groups			Total (N=320)
	UIG (N=100)	MIG (N=109)	LIG (N=111)	
Illiterate	0(0)	9 (8.25)	30 (27.03)	39 (12.18)
Primary & middle level	0(0)	20 (18.34)	68 (61.26)	88(27.50)
High school & higher secondary	12(12)	42 (38.53)	10 (9.01)	64 (20.0)
Graduate & above	88 (88)	38 (34.86)	3 (0.03)	129 (40.31)
Total	100 (100)	109 (100)	111 (100)	320 (100)

(Figures in parenthesis indicates percentages)

Expectations, Reality and Life Satisfaction

It is evident from the Table 1 that majority (82.2%) of elderly of this study come from joint family. The educational Level is relatively very low in lower economic group (Table 2) and 99.1 per cent were married. In this study only 11 expectations were studied (see Table No. 3). The effort was made to find out reality score against each expectation. Reality refers to how these expectations are met by the family members in day to day life. So reality score indicates fulfillment of expectations. The gap between the expectations and actual treatment given to it could be potential cause of elderly problem, particularly emotional in nature which may be strongly associated with some non-communicable diseases like hypertension, diabetes, cardiac problems etc.

As evident from the table 3 and 4 Taken care by the family members, 89 per cent of the respondents expected that their family members should take care of them but only 37 per cent in actual receive the same treatment. 92 percent of the elderly felt that they should be included in important house hold matters but only 26 per cent of the elderly in reality were taken by the family members. 83 per cent of the elderly expected from their family members that they should not leave them alone in the house but 53 per cent of them were actually left alone in the house. 98.4 per cent of the elderly felt that they should not be abused or ignored by their family members 11.3 per cent in reality were being abused by their family members. The expectations of the elderly regarding their sons and females of the family was 98 per cent and 95 per cent respectively, that they should not fight with each other. When tried to find out in actual it was seen that 23 per cent and 28 per cent of their sons and females of the family were in fighting with each other more than the normal. (Though the frequency of fights considered by elderly as significant dependent on the perception of the elderly) 67 per cent of the elderly felt that the expenditure should be borne by all the members equally but in reality only 14.4 per cent of the family members shared the expenditure equally. 96 per cent of the respondents felt that all the family members should respect them and in real all those who

Table 3: Elderlys' expectations for care from family members and actual treatment they received(N=320)

Expectation	Take care of health	Include in important household matters	Not to leave alone at home	Not to be abused	Sons not fight with each others	Females not fight with each others	Expenditure to be borne equally	All should respect	Fulfil all needs	Not to avoid them	Live life the way they want
	A	B	C	D	E	F	G	H	I	J	K
Expect	284 (88.8)	293 (91.6)	265 (82.8)	315 (98.4)	314 (98.1)	305 (95.3)	216 (67.5)	307 (95.9)	277 (86.6)	313 (97.8)	310 (96.9)
Don't Expect	36 (11.3)	27 (8.4)	55 (17.2)	5 (1.6)	6 (1.9)	15 (4.7)	104 (32.5)	13 (4.1)	43 (13.4)	7 (2.2)	10 (3.1)

(Figures in parenthesis indicates percentages)

A=Take care of health of elderly, **B**=Elderly should be Included in important household matters, **C**=Family should not leave elderly alone at home, **D**=Elderly should Not to be abused, **E**=Elderly expects Sons not to fight with each others, **F**=Elderly expects Females not to fight with each others, **G**=Expenditure to be borne equally by family members, **H**=Family members should respect each other, **I**=Family members should fulfil all needs of elderly people, **J**=Family members should not avoid elderly, **K**=Elderly should allow to live life the way they want

Table 4 : Family members taking care of respondents in reality (N=320)

Reality	Take care of health	Include in important household matters	Not to leave alone at home	Not to be abused	Sons not fight with each others	Females not fight with each others	Expenditure to be borne equally	All should respect	Fulfil all needs	Not to avoid them	Live life the way they want
Yes	119 (37.2)	82 (25.6)	171 (53.4)	36 (11.3)	75 (23.4)	91 (28.4)	46 (14.4)	307 (95.9)	108 (33.8)	173 (54.1)	173 (54.1)
No	201 (62.8)	238 (74.4)	149 (46.6)	284 (88.8)	6 (1.9)	229 (71.6)	274 (85.6)	13 (4.1)	212 (66.3)	147 (45.9)	147 (45.9)

(Figures in parenthesis indicates percentages)

Table 5 : Difference between Expectation and Reality

Family members should:	Expectation	Reality	Difference in %
A = Take care of health of elderly	284 (88.8)	119 (37.2)	51.6
B = Elderly should be Included in important household matters	293 (91.6)	82 (25.6)	66.0
C = Family should not leave elderly alone at home	265 (82.8)	171 (53.4)	29.4
D = Elderly should Not to be abused	315 (98.4)	36 (11.3)	87.1
E = Elderly expects Sons not to fight with each others	314 (98.1)	75 (23.4)	74.7
F = Elderly expects Females not to fight with each others	305 (95.3)	91 (28.4)	66.9
G = Expenditure to be borne equally by family members	216 (67.5)	46 (14.4)	53.1
H = Family members should respect each other	307 (95.9)	307 (95.9)	0.0
I= Family members should fulfill all needs of elderly people	277 (86.6)	108 (33.8)	52.8
J= Family members should not avoid elderly	313 (97.8)	173 (54.1)	43.7
K= Elderly should allow to live life the way they want	310 (96.9)	173 (54.1)	42.8

felt that they should be respected were actually given the due respect by their family members.86 per cent of elderly expected from their family members should fulfil their needs and when asked in real only 34 per cent of the respondents family members fulfil their needs. A significant percentage of elderly (98%) felt that they should not be avoided by their family members and out of them 54 per cent of the

elderly were avoided by their family members. 97 per cent of the elderly wanted that they should be allowed to live their life the way they wanted but only 54 per cent were only allowed by their family members to lead their own life the way they wanted.

Therefore, if we try to see the gap between the expectations and the actual treatment the elderly receive from their family members is huge. And this difference results in frustration, helplessness, and at times aggression in the elderly which in turn causes psychological as well as physiological imbalance causing diseases like hypertension, diabetes, depression and anxiety etc. and if these diseases already existing it can exacerbate them.

Table 6 : Comparison of expectations and reality among three age groups (A1-60-69 yrs, A2-70-79 yrs, A3-> 80 Yrs)

Items	60-69 (A1) yrs (N=114)		70-79 (A2) yrs (N=101)		80 & above) (A3) yrs (N=105)		A1 Vs A2	A1 Vs A3	A2 Vs A3	F value
	Mean	S.D	Mean	S.D	Mean	S.D				
Expectation	10.01	1.72	10.08	1.74	9.90	1.84	-	-	-	.23
Reality	4.03	1.38	3.89	1.65	3.75	1.52	-	-	-	.90
Difference of expectation & reality	5.98	1.77	6.19	2.08	6.15	2.00	-	-	-	.35

The differences in the expectations and the actual treatment that the elderly got from their family members and the gap between these two according to age, was not significant both within as well as between the three different age groups. It shows that expectations of Elderly as parents and grand parents from family members continues regardless of progression of Age. Addressing this by orientation training of elderly can help them in resetting their expectations profile which could smoothen their living and safeguard them from host of emotional problems, adjustment etc. The findings equally suggest that education about elderly to family members can help them to become more sensitive and sensible.

Subsequent effort was made to explore whether Expectation Profile of elderly varies across different social groups. It is assumed that emotional, social, economic and cultural bond amongst family members and children, youth and old, is changing rapidly along with modernization, globalization and development; perhaps the bond is deteriorating this; This is what intergeneration research argues as a generation gap. It means that the groups deprived of developmental opportunities particularly cultural globalization possibly hold relatively higher bond as compared to developed one. One can therefore think that expectations may be relatively more in the lower income group category. Perhaps elderly take overall care as a matter of right, return of their lifelong social, moral, economic and educational investments, which is also construed as religious responsibility. Possibly they also believe that whatever movable and unmovable property do they have would be utilized by their children when they pass away. This is what has been going on since decades and centuries, and this has been the heritage to sustain the family tie up (family bond), but which is changing rapidly in modern time.

Table 7 : Comparison of expectations and reality among three groups (S1-UEG, Upper Economic Group, S2-MEG, Middle Economic Group, S3-LEG, Lower Economic Group)

Items	S1 (UEG) (N=100)		S2 (MEG) (N=109)		S3 (LEG) (N=111)		S1 Vs S2	S1 Vs S3	S2 Vs S3	F value
	Mean	S.D	Mean	S.D	Mean	S.D				
Expectation	8.53	2.25	10.39	1.41	10.92	.52	*	*	*	69.60**
Reality	3.09	1.30	3.91	1.47	4.60	1.37	*	*	*	31.33**
Difference of Expectation & Reality	5.44	2.25	6.49	1.91	6.32	1.50	*	*	-	9.06*

* Significant at .05 level, ** Significant at .01 level

When we tried to see the difference in the expectations, the actual treatment the respondents got from their family members and the gap between these two in three different social groups, it was found out that there is a significant difference in the expectations of high and middle class, high and low class and middle and low class. Similarly in the score of actual treatment, all the three social classes were statistically significant. Also when compared within the groups it was found highly significant statistically.

Life Satisfaction

Table 8 : Comparison of life satisfaction items among three groups (A1-60-69 yrs, A2- 70-79 yrs, A3- > 80 Yrs) (N=320)

Items	A1 (N=114)		A2 (N=101)		A3 (N=105)		A1 Vs A2	A1 Vs A3	A2 Vs A3	F value
	Mean	S.D	Mean	S.D	Mean	S.D				
Life-										
Satisfaction	3.93	.29	3.93	.34	3.90	.26	-	-	-	.27

When different aspects of life satisfaction were tried to explore in different three age groups it was not found statistically significant indicating that life satisfaction does not depend on the age of the elderly but on self actualization.

Table 9 : Comparison of life satisfaction items among three groups (S1-upper economic social group, S2-Middle economic social group, S3-lower economic social group) (N=320)

Items	S1 (N=100)		S2 (N=109)		S3 (N=111)		S1 Vs S2	S1 Vs S3	S2 Vs S3	F value
	Mean	S.D	Mean	S.D	Mean	S.D				
Life-										
Satisfaction	3.90	.25	3.9	.31	3.96	.33	-	-	-	.99

The data presented in table 9 show that the life satisfaction amongst three different social groups is not significant statistically. The life

satisfaction amongst elderly in this study is found to be almost same regardless of age and socio economic status, the profile may be relatively different.

The main thrust of this study was to find out how expectations from family members and actual treatment provided by family members is related to some chronic diseases with which some elderly suffer. So correlations was carried out using Statistical Package of Social Sciences (SPSS). The results are shown in the table given below.

Table 10 : Relationship (correlation coefficient) of expectations and actual treatment and difference between expectation and treatment in real with health problems (D1=Cardiovascular diseases, D2=Hypertension, D3= Diabetes and D4=Depression) (N=320)

Care	D1 (Cardiovascular)	D2 (Hypertension)	D3 (Diabetes)	D4 (Depression)
Expectations	1092*	.0346	.1309*	.1360*
Reality	-.1494**	-.0757	-.0004	-.0752
Difference	.0131	.0262	.1232*	.1399**

* Significant at .05 level, ** Significant at .01 level

In table 10, an effort was made to find out the relationship between difference in the expectations, the actual treatment the respondents got from their family members and the gap between these two and different diseases, the followings were the findings:

1. **Cardio-vascular diseases** –There is a significant positive relationship between cardio vascular diseases and the expectation of the older people from their family members and inverse relationship with the treatment they got in reality.
2. **Hypertension** – In Hypertension, there is insignificant but positive relationship between hypertension and the expectations and an inverse relationship with the actual treatment received by older people from their family members.

3. **Diabetes** – Similarly in Diabetes, that there is a positive and significant correlation between the expectations and differences between expectations and the actual treatment in reality with. But inverse correlation with the actual treatment received by the elderly from their family members.
4. **Depression** – For Depression again, there is a significant correlation between expectation and the difference in actual treatment and the depression in older people.

Table 11: Relationship (correlation coefficient) of Life satisfaction with diseases (D1=Cardiovascular diseases, D2=Hypertension, D3= Diabetes and D4=Depression (N=320))

Diseases	Correlation
D1=Cardiovascular diseases	-.0260
D2=Hypertension	-.0091
D3= Diabetes	-.1212*
D4=Depression	-.3078**

* Significant at .05 level, ** Significant at .01 level

Life satisfaction is inversely correlated with Cardio vascular diseases, Hypertension, Diabetes and depression. However it is significantly inversely related with Diabetes ($r = -.1212$, $p < .05$) and with Depression ($r = .0378$, $p < .01$).

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Filial Responsibility and Problems of the Caregivers in the Family Setting*

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ABSTRACT

This paper focuses on the filial responsibilities recognized by the obligatory kin and the practical problems in carrying them out, based on data obtained from a sample of 118 caregivers whose elderly parents co-reside or close to their adult children. The study villages were drawn from two districts, one from the western region and the other from the southern region of Tamil Nadu. Many of them are poor, living together or nearby with their elderly parents and monetarily or materially contributing to the elderly. The results show that these caregivers do recognize their filial responsibilities. They are categorical that it is the duty of the sons, and not of the daughters, to take care of the elderly. Majority of them do not find difficulties in care giving adding that it is their moral responsibility. However, they also state that difficulties will arise only when the elderly parents become bedridden. According to these caregiving adult sons, the provision of care includes food, clothing, finance, general care and health care. Most of these rural caregivers realize their obligations to their parents. However, certain factors like lack of adequate income, lack of housing space, competing demands of obligations to their own children and the rising aspirations over the standard of living act as constraints in fulfilling their filial obligations normatively expected and personally subscribed..

Key words: Filial Responsibility, Intergenerational Solidarity, Family Relationships, Living Arrangement, Caregivers, Obligatory Kin.

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Social life is a web woven with social relationships. These interpersonal relations are governed by mutual rights, obligations and exchanges. Indian social organization is dominated by ascribed kin role relations, especially parent – child relations, that are expressed in terms of mutual interdependence which needs deep understanding to maximize its strength in enhancing the well-being of members of different generations. The family is the most important institution that has survived through ages. The familial reciprocal relationships are in fact a crucial concomitant of an older person's well being and autonomy. The longevity of family relationships is found remarkable – three times as long as non-kin ties (Wellman and Wortley, 1989).

In a family the structural positions are occupied by persons whose rights and obligations are prescribed. Parents care their children from infancy to later stages of their life and children taking care of them in old age can be explained in terms of 'debt of gratitude' and as obligation to provide care, security, love and affection. In India caring of aged is rooted in religious and moral values and is governed by community norms. It is being made legal by enacted law.

A common opinion in our society is that families do not care for their older relatives as well as they did in the 'good old days'. The plausibility is that surviving older relatives in the past were proportionately less in number and valued for their economic contributions to the family whereas caregiving kin were many.

Today, however, adult children have to provide more difficult set of care to parents over much longer periods of time than they did when life expectancy was much lower and the elders comprised only four percent of the population. Besides, the caregivers tend to share rising aspirations of their cohorts and as they face the competitions in contemporary society, thus increasing the investment of resources in career building. They have to work hard not only to meet the increasing financial requirements but partly to sustain their self and family esteem. The present generation of caregivers is of the view that it is 'sandwiched' between two generations - their parents and children with their competing demands. Women, the traditional care givers, may be juggling extensive family responsibilities in addition to employment and their own age related transitions. The caregiver's health, employment, personal freedom,

privacy and social relationships can be negatively affected by the stress generated by provision of expanding care. Financial burden includes not only direct costs of medical care or hired help but also indirect opportunity costs of lost income. Emotional burden of feeling alone and isolated and without time for oneself appear to be the greatest costs (Abel, 1986) they are made to pay for. In some cases, caregiving stress may become severe enough to lead to family breakdown, neglect and abuse of the elderly. The strain of care givers especially psychological distress may cause them to seek relief through institutionalizing of their older relatives (Morycz, 1985).

The transition from rural to urban way of life, the shrinking of the living space per family unit, the shift from the three generation family to two generation family, growing costs of good education in the competitive world, as well as modern health care, and the rising expectations about the standard of living all together make it difficult for the sons and daughters of the elderly to fulfill their filial obligations. As Lee et al (1994) say, while there is a clear conceptual connection between the concepts of filial responsibility expectations and functional solidarity there is also a divide between them. The former involves norms pertaining to the intergenerational exchange of assistance. The latter involves the actual exchange of assistance. The theory clearly implies a positive relation between filial responsibility expectations and functional solidarity.

Conceptual Framework

The phrase “filial obligations” is generally understood to refer to special duties—specific kinds of actions, services, and attitudes—that children must provide to their parents simply because they are those parents’ offspring. Influential in many human cultures throughout history—“Honor thy father and thy mother” is a widely known adage that reminds children about their duties to their parents. Filial obligation refers to a societal attitude towards the duty of (adult) children to meet the needs of their ageing parents (Seelbach & Die, 1988). Rossi and Rossi (1990) define norms of filial responsibility as culturally-defined rights and duties that specify both the ways in which family members are expected to behave toward each other and the obligations to exchange and provide support to one another. It is argued that an

individual’s expectations of and attitudes toward filial obligation develop during socialization, by personal experiences as well as by observing relationships between family members of different generations (Goldscheider & Lawton, 1998; Burr & Mutchler, 1999). Norms of family responsibility – that adult children should help their parents – become operationalized in actual care giving behaviour (Brody, 1985).

Values associated with filial piety have greatly influenced parent care and parent – child relationship of peoples in East Asia – Koreans along with the Chinese and Japanese (Sung Kyu-taik, 2005). Indeed, they have shared these values for many generations; the values are reflected in their daily ritual and norms. Even minute details governing their family system and manners of daily living are touched upon by the ideals of filial piety. It appears in East Asian culture that filial piety still has strong roots in the Asian culture and that values based on that culture have not yet been greatly undermined.

Filial piety consists in the practice of filial respect and care to parents, which has been a normative duty and obligation of adult children. Filial piety is a social norm that parents should love and care for their children who in turn should respect and care for their parents. It is moral relationships relevant to both fathers and mothers, and son and daughters. Filial piety is assumed to be a manifestation of natural human nature.

The core ideal of filial piety is the fulfilment of a child’s obligation to the parent. However, these ideals seldom translate into the same prototype of practices. The context of socialization and early experiences with close ties lead to family and individual variations in fulfilling these obligations.

Qualls (1995) finds the way in which children’s needs are met in the original family context influences adult children’s response to dependent parents’ needs, reactivating early feelings of distress and result in overt interpersonal conflict. Parrott and Bengtson (1999) find complementary results: positive early affection received from parents begets similar intergenerational exchanges of help and support when parents who raised them get old. It is essentially reciprocal. Yet, in some people, a sense of obligation may override early antagonisms.

Social exchange theory offers a plausible explanation for a strong endorsement of filial norms. According to this theory, human beings are motivated by self-interest and seek to maximize their rewards and minimize the costs that they incur in a relationship. At the same time, the theory asserts that relationships are governed by a norm of reciprocity (Nye, 1979). Adult children whose own parents were good to them but who fail to feel responsible for maintaining the well-being of ageing parents would likely encounter a number of costs (e.g., guilt, social disapproval), whereas those who do acknowledge their part in the interdependent relationship with parents might encounter rewards (e.g., satisfaction, inheritance, affection, gratitude). Some scholars believe that it is impossible for children to restore balance, to ever fully and adequately repay their parents. A sense of indebtedness (Seelbach, 1984) or irredeemable obligation (Berman, 1987) to parents persists, even in social exchange, because parents give first, voluntarily, and spontaneously. Subsequent gifts, no matter how superior in content, cannot match the first gift.

Attachment theory poses another explanation for the endorsement of filial norms. The existence of an internal state of attachment, an emotional or affectionate bond that adult children have for parents, prompts them to remain in contact and communication with parents, protecting them from harm (Cicirelli, 1989 & 1993). Thus, a sense of filial responsibility is the result of friendship, mutuality, and positive feelings for one's parents rather than a sense of debt or obligation (English, 1979).

In many Asian cultures, religious moral principles provide a strong ideological basis for filial piety and status of elders as well. Accordingly, filial piety demands that children should love, respect, and serve their parents. The importance of respect and warmth for elders is reflected in the language of Asian cultures referring to the respect, gratitude, and obligation that children should feel toward parents and serves as the basis for the provision of parent care. In fact respect for parents was the most important motivator for providing filial support.

An area that is not sufficiently studied in the research on the elderly is the relationship between parents' expectations for assistance from children and the extent to which children actually provide assistance to their parents which is functional solidarity. This issue is important from

the intergenerational solidarity point of view as it represents an unexamined area. Bengtson and Roberts (1991) suggest that a logical step in the development of the theory on intergenerational solidarity is to study the exchange dynamics in intergenerational relations in relation to the norms pertaining to the family life. It is possible for parents to believe that children should provide considerable support to their parents in general terms, but also to recognize that their children cannot or will not do so. Elderly parents may believe that children are obligated to support parents, but expect little from their own children because of children's problems or the history of their relationships.

The primary forms of assistance to the elderly parents are emotional support, financial aid, and instrumental activities inside and outside the home (e.g. transportation, preparing food, shopping and household chores) and personal care (bathing feeding, dressing). The type of familial assistance given is largely determined by functional level of older members. Ingersoll-Dayton and Antonucci (1988) have suggested that the elderly operate from a norm of generalized reciprocity rather than specific or balanced reciprocity, that is exact repayments are not expected.

Given the important role of family members as confidants, helpers and members of social networks, it would seem an obvious conclusion that family support and engagement should also contribute positively to the health and well-being of older people. This paper focuses on the recognized filial responsibilities and the practical problems in carrying out the tasks, based on a study of 118 caregivers in the family setting in four villages of two districts, one from the western region and the other from the southern region of Tamil Nadu.

Method

The study was conducted in two districts of Tamil Nadu, viz. Tirunelveli and Coimbatore, one from the southern region and the other from the western region. The districts consist of community development blocks. At the first level it was decided to select two blocks from each district. Thus, four blocks from the two districts were selected using lottery method. They are Manur and Cheranmahadevi from Tirunelveli district and Kinathukadavu and Sarcarsamakulam from Coimbatore district. Then, from each of the four blocks one village was selected

using again lottery method. Thus totally four villages were covered for the study. In every village the list of the elders was prepared from the voters list available in the Panchayat offices. The final list contained elders having at least one married child living within the village were identified with the help of village heads, ward members and anganwadi workers. Any one of the children living within the village was identified with the help of the respective elders themselves. Available children of elders within the village were interviewed. The study covered 73 children from Coimbatore district and 45 children from Tirunelveli district. In all there are 118 adult children.

An interview schedule was constructed for collecting the data from the caregivers. It includes questions on personal background, socioeconomic and living conditions, proximity to parents and normative parental and filial obligations, experience of community pressure, problems in care-giving, and economic and service contribution to the elderly parents. Percentage and mean were used in the description of data. Correlation was used to find out the relationship between variables. Analysis of variance and t tests were used in finding out the difference between the categories of certain variables in terms of certain other variables.

Findings

In contemporary society, we tend to interact socially with people around the same age we are. Connections across the years may be done through intergenerational living arrangements. Apart from denoting special proximity between them, living arrangement, is a predictor of the cohesion between and integration of generations. One-fourth (26.3%) of the households are characterized by co-residence of fathers and married adult children in the same house. Among the rest, about one third have the proximity of their extended family: living in adjacent house (7.6%), others are living in the same street (13.6%) or in the same village (11%). A significantly higher proportion (42.4%) of the respondents have their mothers living in the same house. Every tenth (10.2%) have their mothers living in adjacent house while other mothers live in the same street (16.1%) or in the same village (12.7%). These living options with their adult children allow them to participate more closely in the lives of their grandchildren. If disconnected, the elders would find themselves feeling isolated.

Of the 118 respondents, 51 are living with their parents, either both or any one. The tradition being patrilineal and patrilocal, a woman after marriage usually joins the husband's family or community. However, this tradition of joint living could not be maintained by many families for various reasons. The reason for other types of living arrangement were elicited. The most prominent reasons for negating co-residence are lack of space, lack of adjustability, antipathy of daughter-in-law and preference for privacy. Many of them contend that they do not have enough space in the house to live as a joint family with parents. Lack of space results in independent living locally, developments like industrialization, urbanization and modernization also have entailed dispersal and / or dissolution of joint family. Nuclear family has become the norm. Some respondents state that their wives, i.e. the daughters-in-law of the concerned families, do not want to live with the elderly of the family, i.e. the parents of the husbands. They want to live in their own nuclear family. This is one of the main reasons for the separation of the elderly after the marriage of their sons. Traditionally, women were oriented from childhood to espouse 'family unity' but these values have become weak in modern times. With the development of modernization and mass media, a woman increasingly thinks of her husband and the children as constituting the family. Ponnann (Male, 40) says ruefully, "We have this daughter-in-law problem. It is better for all, if we live separately. If I am at home, she will serve them (his parents) food. If I am not, she will leave them hungry". This is prevalent in both coresident households and other forms of living arrangements. Any persistent illwill between the inlaws forces the obligatory adult children to face the unpleasant situation of negotiating and renegotiating with both without ostensibly looking partial.

Lack of adjustability on the part of the elderly is mentioned as a reason by some respondents. In essence, non-binding interpersonal relationships, chiefly the dyad of mother-in-law and daughter-in-law, account for parents and adult sons living separately. In some cases there are only daughters for the elderly. Tradition dictates that once a woman is 'married off to somebody', she belongs to the husband's family. It is not desirable for the elders to live with the daughters. Thus, those elderly having only daughters live separately after the marriage of their daughters. In case of the in-laws of a married daughter being alive, the above norm gets stronger and functional.

One-fifth of all respondents (20.3%) have experienced community pressure / criticism for not living with parents. While about two-thirds (63.6%) of the respondents materially and monetarily provide to their parents, one-third (36.4%) of the respondents are not extending such support to their parents. While more than a half (55.1%) of the respondents render services to their parents, the remaining (44.9%) stay out of this domain.

While the vast majority (81.4%) of the respondents report not having difficulty in caregiving to the parents, the rest (18.6%) expressed difficulties confronting them in caregiving to the elderly. The main difficulty experienced by the caregivers is concerned with providing routine services like serving food or medicine to the elderly in time or taking them to medical centres. They find financial responsibility to be onerous in view of inadequate income. Lack of space in the house is also mentioned as one of the difficulties. Incompatibility, emanating mainly from obsolete role definitions on the part of elderly, has also been cited by some caregivers. Parents are rigid on personal equations and patterns of exchange and are unwilling to adapt to the changing situations and this makes caring them difficult. However, most of the respondents do not face obstructing social relationship in the process of taking care of their elderly parents. Having imbibed it their moral responsibility to look after their parents, they do not anticipate such discordance coming in the way. However, many of them also are of the opinion that difficulties will arise only when the elderly parents become bedridden. This may be viewed in association with depletion of potential care-giving kin members.

Three out of five (60.2%) of the respondents state that the sons have the responsibility of providing everything to the parents. As for the responsibilities of the sons to the parents, three out of ten (29.7%) of the adult children mention providing overall care to the parents, one out of ten (11%) include monetary support.

As for the responsibilities of daughters to their parents, about one-fourth (27.1%) of the respondents mention affection. Nearly an equal proportion (26.3%) of the respondents expect the daughters to visit the parents by way of extending emotional care. More than one-fifth (22%) of the caregiving sons expect daughters to provide 'general care'. An equal proportion of them add that the daughters should do as much they can.

Birth order is a factor in assigning the supportive role. Three out of ten (29.7%) of the respondents believe that there is a difference between the eldest son and other younger sons in their responsibility to the parents. The eldest son has more responsibility to the parents than others. However, seven out of ten (70.3%) of the respondents do not see any such difference in the responsibility of the eldest son and the younger sons.

As for the material support to be provided to parents by children, food is mentioned by half (50.8%) of the respondents. Dress is mentioned by about half (46.6%) of the respondents. Nearly two-thirds (63.6%) of them mention general care. Financial assistance is considered important by 43.2 per cent of the caregivers. Two-fifths (39.8%) add health care. Another two-fifths (40.7%) of the respondents state that all needs of the parents should be taken care of by the caregivers.

When asked about the responsibilities of the parents to children, one-third (35.6%) of the adult sons consider bringing them up as the major responsibility. The second obligation (29.4%) is arranging the marriage of the children. This implies both economic and social commitments. Providing for education (22%) and house (16.1%) are expected of parents by sons.

Most of the caregivers realize their obligations to their parents. However, certain factors like lack of adequate income, lack of housing space, obligations to their own children and the rising aspirations and rising cost of living confront them to make it difficult for the sons of the elderly to fulfill their filial obligations as normatively ordained and as they would like to. On the other hand, actual delivery of routine support is moderated by the quality of relationship between mother-in-law and daughter-in-law who spend considerable time at home together. Souring of this tie creates a context not conducive to fulfillment of material as well as emotional needs. Filial ties in the support system may be necessary but not sufficient to realize the end of elderly care.

In the absence of strong values in support of independent living arrangement, elderly in the study population prefer coresidence to separate living. Apart from emotional fulfillment, it provides for greater integration with close ties giving them a sense of belonging. Emotionally the elderly want to have intensive exchange with their grand children who occupy considerable space in their emotional world.

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Attitude of the Younger Generation Towards the Elderly and Elderlys' Attitude Towards Them

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ABSTRACT

The aim of the present investigation is to study the attitude of the younger generation towards the elderly persons and also attitude of the elderly persons towards the younger generation. Accordingly, a group of 100 younger persons (50 male and 50 female) and 100 elderly persons (50 male and 50 female) were selected as sample in this investigation. Two general information schedules, Attitude towards the younger generation questionnaire and Attitude towards the elderly questionnaire were administered to two groups of subjects by giving proper instructions. The findings revealed that younger generation has more or less favourable attitude towards the elderly, on the contrary, elderly people have negative attitude towards the younger generation. Male group of younger generation has comparatively better attitude towards elderly than that of the female group. But the reverse picture was observed in case of the elderly people. Not only this, family type also has a significant role in this regard. In both the cases joint family takes positive role than that of the nuclear family.

Key words : Attitude, Younger generation, Elderly.

The family may be defined as a social grouping, the members of which are united by bonds of kinship. Nuclear family consists of two mature adults of opposite sex who live together in a union (marriage) recognized by other members of their society, their father/father-in-law and mother/mother-in-law and their children. These ties vary from one society to another society. The pattern of family life established in early adulthood, starts to change with the onset of middle age. These changes

are made more pronounced by retirement, with the accompanying reduced income or by the death of a spouse in old-age. Family environment takes an important role upon elderly people. Family is a subsystem of society which is perceived to be most relevant to mental health and mental health problems of its members. Functions of the family are geared facilitating the promotion and preservation of health in general and mental health in particular. Hence, different aspects of family climate are etiologically relevant : (a) unhealthy interpersonal interaction in the family leading to dissatisfaction of physiological, emotional, security and social needs; (b) pathological and disturbing communication patterns, lack of support by the family members and cohesiveness in the family. The increasing diversity of family structures within and across nations will invite an assortment of local solutions drawing resources from individuals, families and communities (Johnson and Climo, 2000). A great deal of research has found that health care, family and state support and self-esteem are related to perception of happiness, sense of well-being among the aged people (Pei and Pillai, 1999). Attachment is highly relevant to psychological experience in later life (Bradley and Thomas, 2001). It means higher levels of sense of community, friends, activity, impact of neighbour including unit and dwelling environment which are important for residential satisfaction of elderly (Kahana *et al.*, 2003; Pretty *et al.*, 2003).

Research on perceptions of intergenerational communication across cultures was held in Northern and Southern Italy. According to research findings, all cultural groups perceive older adults as more rigid and non-accommodating than younger adults (Hollis and Lisa, 2003). Ageing leads to substantial increase of the tax burden and an estimated welfare loss for future generations in current social security system of Netherlands. Intergenerational relationships has been elaborated by the studies of new dimensions of emotional support and care-giving, the impact of divorce and separation, changing roles within the family, narrative maps of ageing within the social gerontology (Hyde and Gibbs, 1993; Shenk, 2001; Wenger and Burholt, 2001; Drew and Silverstein, 2004; Scroder-Butterfill, 2004; Phoenix and Sparkes, 2006). The relationships of modern societies are ambiguous. The relations with the modern society are decoupled from the community, the context and expectations on how really they should be. In our days, it is the

individual who is responsible for his/her own route in spite of the threats of the modern society and promises (Giddens and Pierson, 1998). For most of the young people, family structure and family relations are very different than in the past and it is constantly evolving (Jessor *et al.*, 1991). Considering all these, the present investigation has been designed to study attitude of the younger generation towards the elderly and elderlys' attitude towards them.

Objectives

1. To study the attitude of the younger generation towards the elderly person.
2. To study the attitude of the elderly person towards the younger generation.
3. To study the impact of gender difference on attitude.
4. To study the impact of family type on attitude.

Hypotheses

Hypothesis – I : Attitude of the younger generation of male group towards the elderly is better and more favourable than that of the female group.

Hypothesis – II : Attitude of the younger generation belonging to joint families towards the elderly is more favourable than that of the younger generation belonging to nuclear families.

Hypothesis – III : Attitude of the elderly person of male group towards the younger generation is better and favourable than that of the female group.

Hypothesis – IV : Attitude of the elderly person belonging to joint families towards the younger generation is more favourable than that of the younger generation belonging to nuclear families.

Method

Sample

A group of 100 individuals of younger generation (50 male and 50 female) and another group of 100 elderly person (50 male and 50 female) were selected as subjects in this investigation. The pertinent characteristics of the subjects are as follows :

For younger generation :

Age : 18 to 25 yrs.

Education : At least Madhyamik

Family Type : Both Joint and Nuclear

Duration of stay : At least five years in the same environment

For elderly person :

Age : Above 60 years

Education : At least Primary

Family Type : Both Joint and Nuclear

Duration of stay : At least five years in the same environment.

Tools Used :

1. **General Information Schedule :** It consists of items like name, address, age, gender, educational qualification, family type, duration of stay etc. – one for younger generation and other for elderly person.
2. **Attitude Towards The Elderly Questionnaire :** It consists of 25 statistically significant items answerable in a five-point scale from strongly agree to strongly disagree where high score indicates favourable attitude of the younger generation towards the elderly person and vice-versa. Odd-even split-half reliability is 0.79.

Table A : Item-wise Distribution of Discrimination Index

Item No.	Discrimination Index	Item No.	Discrimination Index
1.	15.23	14.	14.24
2.	16.46	15.	13.77
3.	12.12	16.	15.68
4.	10.28	17.	12.19
5.	11.37	18.	11.33
6.	13.61	19.	10.98
7.	14.00	20.	12.42
8.	15.78	21.	13.96
9.	14.97	22.	14.83
10.	11.56	23.	15.69
11.	12.31	24.	16.58
12.	15.88	25.	11.97
13.	17.47		

3. Attitude Towards The Younger Generation Questionnaire:

It consists of 25 statistically significant items answerable in a five-point scale from strongly agree to strongly disagree where high score indicates favourable attitude of the elderly person towards the younger generation and vice-versa. Odd-even split-half reliability is 0.82

Table B : Item-Wise Distribution of Discrimination Index

Item No.	Discrimination Index	Item No.	Discrimination Index
1.	11.39	14.	10.24
2.	12.46	15.	12.76
3.	13.87	16.	13.91
4.	14.29	17.	14.42
5.	15.58	18.	15.22
6.	11.75	19.	13.19
7.	12.98	20.	16.92
8.	16.10	21.	10.52
9.	14.97	22.	15.25
10.	11.56	23.	13.77
11.	13.66	24.	14.06
12.	14.11	25.	12.84
13.	13.55		

Administration, Scoring and Statistical Treatment

The general information schedule and other two questionnaires were administered to two groups by giving proper instruction. Data were collected and properly scrutinized. Scoring was done with the help of scoring key. For general information schedules, frequency and percentages were calculated. Mean and S.D. were calculated for other questionnaires. Comparison was made by applying t-test.

Results and Interpretation

The general characteristic data inserted in Table 1A and Table 1B explicitly depicted the characteristic features of the younger generation and also the elderly person, under study.

Table 1A : General characteristic features of the younger generation

General features	Male (N=50)	Female (N=50)	Comb. (N=50)
Age in years (Mode)	20.00 yrs.	19.00 yrs.	19.50 yrs.
Education (%)			
Madhyamick	20.00	30.00	25.00
Higher Secondary	70.00	70.00	70.00
Graduate	10.00	0.00	5.00
Family Type(%)			
Joint	48.00	54.00	51.00
Nuclear	52.00	46.00	49.00
Duration of Stay %			
Below 5 yrs.	50.00	50.00	50.00
Above 5 yrs.	50.00	50.00	50.00

Table 1B : General characteristic features of the elderly person

General features	Male (N=50)	Female (N=50)	Comb. (N=50)
Age in years (Mode)	68.00 yrs.	67.00 yrs.	67.50 yrs.
Education (%)			
Primary	20.00	40.00	30.00
Matric	60.00	60.00	60.00
Graduate	20.00	0.00	10.00
Family Type (%)			
Joint	56.00	46.00	51.00
Nuclear	44.00	54.00	49.00
Duration of Stay %			
Below 5 yrs.	50.00	50.00	50.00
Above 5 yrs.	50.00	50.00	50.00

Data inserted in Table – 2 reveals that there seems to be indication of favourable attitude of the younger generation of male group towards the elderly, on the contrary, no significant opinion was given by the female group. It can further be said that younger generation prefers to listen sympathetic talk and soft behaviour from their grand parents and they talk with them more freely than parents. More favourable attitude was observed among the male group than that of the female group. When comparison was made between the male and female group in terms of attitude towards elderly, significant difference was observed. Thus the **Hypothesis – I** which states, “**Attitude of the younger generation of male group towards the elderly is better and more favourable than that of the female group**” – is accepted in this investigation.

Table 2 : Comparison between the male and female group of younger generation in terms of attitude towards the elderly

Category	Attitude Towards Elderly			t-value
	N	Mean	S.D.	
Male	50	79.92	6.24	3.14*
Female	50	74.04	5.99	

Score range : 25 – 125, * $p < 0.01$

High score indicates favourable attitude towards the elderly person and vice-versa.

When comparison was made between the two groups of younger generation belonging to joint and nuclear families in terms of their attitude towards the elderly person, significant difference was observed. This is true for male, female and combined group respectively. Analysis of data also reveals that the younger generation who belong to joint families have more favourable attitude towards the elderly than those who belong to nuclear families. Further analysis of data reveals that sharing, mutual understanding, helping attitude etc. are the significant factors in this regard. Thus, the Hypothesis – II which postulates, “Attitude of the younger generation belonging to joint families towards the elderly is more favourable than that of the younger generation belonging to nuclear families” – is accepted in this investigation.

Table 3 : Comparison between the two groups of younger generation belonging to joint and nuclear families in terms of their attitude towards the elderly

Category	Attitude towards the elderly person						t-value
	Joint			Nuclear			
	N	Mean	S.D.	N	Mean	S.D.	
Male	24	83.67	7.12	26	77.48	6.13	6.08*
Female	27	79.54	6.99	23	73.91	5.12	6.94*
Combined	51	81.48	6.19	49	75.80	7.00	7.68*

Score range : 25-125, * $p < 0.01$

High score indicates favourable attitude towards the elderly person and vice-versa.

Comparison was also made between the male and female group of elderly person in terms of their attitude towards the younger generation. It is remarkable to note that both the group have unfavourable attitude towards the younger generation. Analysis of data also reveals that the main reasons behind this unfavourable attitude are : a) selfish and neglecting attitude of the younger generation towards the elderly, b) lack of responsibility and c) disobedience. They also opined that younger generation thinks that they know everything without knowing the matter deeply. Not only this, they expressed that changing values of younger generation is not good and healthy for our society. Male group have more unfavourable attitude than that of the female group. Thus the Hypothesis –III which postulates, “Attitude of the elderly person of male group towards the younger generation is better and favourable than that of the female group” – is rejected in this investigation.

Table 4 : Comparison between the male and female group of elderly person in terms of attitude towards the younger generation

Category	Attitude toward younger generation			t-value
	N	Mean	S.D.	
Male	50	54.45	10.06	4.28*
Female	50	59.41	11.52	

Score range : 25 – 125, * $p < 0.01$

High score indicates favourable attitude towards the younger generation and vice-versa.

Data inserted in Table – 5 reveals the comparative picture of the elderly person belonging to joint and nuclear families in connection with the attitude towards the younger generation. Although both the group have unfavourable attitude still comparatively better attitude was expressed by the elderly who belong to joint family setting than that of the nuclear family setting. When comparison was made between the two groups, significant difference was observed for male, female and combined group respectively. Thus the Hypothesis – IV which postulates, “Attitude of the elderly person belonging to joint families towards the younger generation is more favourable than that of the younger generation belonging to nuclear families” – is accepted in this investigation.

Table 5 : Comparison between the two groups of elderly person belonging to joint and nuclear families in terms of their attitude towards the younger generation

Category	Attitude towards the younger generation						t-value
	Joint			Nuclear			
	N	Mean	S.D.	N	Mean	S.D.	
Male	28	58.19	8.91	22	51.32	7.04	3.04*
Female	23	60.26	9.01	27	52.64	7.34	3.24*
Combined	51	59.12	9.01	49	52.05	7.25	4.34*

Score range : 25-125, * $p < 0.01$

High score indicates favourable attitude towards the younger generation and vice-versa.

Major Findings of the Study

1. Younger generation has more or less favourable attitude towards the elderly person.
2. Comparatively better attitude was observed among the male group than that of the female group.
3. Younger generation belonging to joint families has comparatively better and more favourable attitude than those who belong to nuclear families.

4. According to the younger generation, they have a good relationship with their grand parents due to their soft and sympathetic behaviour.
5. On the contrary, elderly persons have unfavourable attitude towards the younger generation.
6. More unfavourable attitude was observed among the male group of elderly person than that of the female group.
7. Elderly persons who belong to joint families have comparatively better attitude towards the younger generation than those who belong to nuclear families.
8. Elderly persons opined that young generation have selfish and neglecting attitude towards the elderly. Lack of respect, responsibility and disobedience seem to be present in them.

Conclusion

Overall picture reveals that although young generation have more or less favourable attitude towards the elderly but elderly persons have unfavourable attitude towards the younger generation. Not only this, family type also takes a significant role in this context. Thus provisions for maintaining good and healthy relationship within the family adequate measures should be taken so that there exists free interaction within the family members. For maintaining family peace co-operation is needed from both side. As the society is changing very fast, so there may arise maladjustment between the two generations. But for maintaining good and healthy relationship everybody should have to stretch forward their hands in this regard.

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Effectiveness of Self Enhancement Programme on Self Esteem of Institutionalized Elderly

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ABSTRACT

The purpose of the present study was to find the effectiveness of Self Enhancement Programme (SEP) to enhance the psychological well being of the elderly, through improving their self esteem, which in turn help the elderly to adjust with ageing. The data was collected from 60 institutionalized elderly (30 each in experimental and control group) using instruments Background Profroma and Rosenberg's Self Esteem Scale. The study results revealed that Self Enhancement Programme is an effective method to improve self esteem among institutionalized elderly.

Key words : Self esteem, SEP, Institutionalized elderly.

Ageing, which is an inescapable reality of the human existence on the planet earth, plays a crucial role in the global demographic transition. According to projections by the UN Population Division, there will be two elderly persons for every child in the world by 2050.

A study was conducted on the self concept of institutionalized and non-institutionalized elderly in Italy (Antonelli *et al.*, 2000). Sixty institutionalized and sixty non-institutionalized elderly men and women participated in an investigation which assessed their spontaneous self-concept by means of the Twenty Statements Test and their level of self-esteem by means of the Rosenberg Scale. The results indicated that the institutionalized elderly have a more negative self-concept, lower levels of self-esteem, and a more restricted inter-personal self.

A study was conducted to find the emotional and social adjustment to aging in medical men between 45 to 74 years in Bangalore city (Paintal and Murthy, 1969). Data collected using two criterion tests, Life Satisfaction Index A, and Your Attitudes part of Your Activities and Attitudes Inventory from 70 participants. Result showed that well adjusted men were socially active, satisfied with their spouse, children and past achievement; they were happy with life, highly optimistic and had positive self image. Poorly adjusted men were less socially active, dissatisfied with spouse and past achievements; they were depressed, highly pessimistic and revealed negative self image.

Many older people face stressful situations such as the death of friends and family, deterioration of health and physical ability, loneliness or depression. Retirement sometimes creates feelings of not being a productive part of society and stress due to reduced income. Relocating after retirement adds other problems such as difficulty in making new friends, depression and loneliness due to separation from family and friends. If self-esteem is decreased because of these stressful events, the elderly are more prone to abuse alcohol and other drugs to relieve their pain. The likelihood of abusing prescription medications also increases as people age.

Rapid spreads of modernization, growing urbanization and crumbling of joint family system have conspired to increase insecurity, low self esteem and loneliness among the geriatric population especially in institutionalized elderly in India.

Self-esteem is an important aspect of the adaptive processes at all stages of life, but especially in older adults. It is linked to the quality of adaptation, well-being, life satisfaction and health. Studies have found that various techniques such as individual or group reminiscence therapy, life review program, physical exercise etc are effective in improving self esteem and thereby enhancing the quality of life of institutionalized elderly (Arulmani, 2005).

An experimental study was conducted to find the effect of meridian exercise on health status, depression and self esteem for institutionalized elderly people in Seoul (Kyung Hee, 2002). The research population included 38 participants, 65years and above, who were assigned to experimental group (eighteen) and control group (twenty) and meridian exercise was done for a total 30minutes per session for twelve sessions

over two weeks. The result showed statistical significance of effect of meridian exercise on mental-mood health status, depression and self esteem ($t=10.301$, $p=0.001$; $t=15.58$, $p=0.001$; $t=14.57$, $p=0.001$). The study was concluded that meridian exercise can be used to improve health status, reduce depression and increase self esteem, and so to promote the quality of life for institutionalized elderly people.

Wang *et al.* (2005) conducted a study to examine the comparative effects of reminiscence on self-esteem, self-health perception, depressive symptoms, and mood status of elderly people residing in long-term care facilities and at home. A quasi-experimental design was conducted, using pre-intervention and post-intervention tests and purposive sampling. Rosenberg's Self-Esteem Scale (RSE), Health Perception Scale (HPS), Geriatric Depression Scale Short Form (GDS-SF), and Apparent Emotion Rating Scale (AER) were used as study instruments. Each subject was administered pre- and post-experimental tests at a four month interval and all subjects underwent weekly individual reminiscence intervention. Forty-eight subjects completed the study, with 25 institutionalized elderly people and 23 non-institutionalized home-based elderly people. Independent t-tests and paired t-tests were conducted to measure the differences in variable means between and within groups. A significant difference was found between groups in mood status post-test ($t=5.96$, $p=0.001$) and significant differences were noted in self-health perception ($t=2.56$, $p=0.018$), depressive symptoms ($t=2.83$, $p=0.009$), and mood status ($t=3.02$; $p=0.007$) between the pre- and post-intervention tests in the institutionalized group. The study concluded that reminiscence therapy is especially appropriate for older people who reside in care facilities. Implementing strategies that enrich the lives of elderly people residing in long-term cares is crucial, and reminiscence offers a method for promoting healthy ageing.

Two main hypotheses have been formulated for present study, which were tested at 0.05 level of significance

1. There will be significant difference between the pre test and post test self esteem scores of institutionalized elderly in the experimental group.
2. There will be significant difference in the post test self esteem scores of institutionalized elderly in both experimental and control group

METHOD

Sample

A quasi-experimental pretest post test design was found to be appropriate for this study. Samples selected were 60 institutionalized elderly between the age group of 60 and 80 years, from two different old age homes of Kottayam District, Kerala. Thirty samples from one setting was selected for experimental group and thirty was selected for control group from another setting. The sample selection was based on non-probability purposive sampling using inclusion and exclusion criteria.

Inclusion criteria :

1. Elderly who stay in old age homes for a minimum period of one year.
2. Elderly, in the age group between 60 to 80 years.
3. Elderly, who can comprehend instructions.
4. Elderly who are willing to participate in the study

Exclusion criteria

1. Seriously ill or bedridden people
2. Elderly who are diagnosed to have mental illness and on treatment for mental illness

Instruments

Instrument I : Background Proforma

This was developed to acquire the background information of institutionalized elderly. It consisted of 16 items such as age, gender, religion, education, past occupation, marital status, presence of relatives in the old age home, number of children, visit of family member and frequency of visit, visit to home and frequency of visit, health status, duration of stay in old age home, source of income, involvement in productive activity, person responsible for admission and reason for institutionalization.

Instrument II : Rosenberg's Self Esteem Scale

This is a structured rating scale to assess self esteem of general population, which was developed for adolescence, but commonly used for all age group including elderly. Rosenberg (1965) reported that

internal consistency reliability of the instrument ranges from 0.85 to 0.88. The scale consists of 10 items; each item is scored on a three point rating scale under the options: strongly agree, agree, disagree and strongly disagree. Items 3, 5, 8, 9, and 10 are negative questions herewith reverse scoring. The maximum and minimum scores are thirty and zero respectively. The scores are classified into three categories; scores between 0 to 14 represents low self esteem, 15 to 25 normal self esteem, and above 25 high self esteem.

RESULTS

Table 1 : Frequency and percentage distribution of pre test self esteem scores in the experimental (n = 30) and control group (n = 30)

Class Interval	Interpretation of Self Esteem Score	Experimental group		Control group	
		f	%	f	%
0-14	Low self esteem	11	36.7	6	20.0
15-25	Normal	19	63.3	23	76.7
≥ 26	High self esteem	-	-	1	3.3

The data presented in table 1 reveals that majority of the sample were in normal self esteem category in both experimental (63.3%) and control (76.7%) group; 36.7% in experimental and 20% in control group were in low self esteem category. There were no subjects with high self esteem in experimental group; but in the control group 3.3% represented high self esteem. It reflects that the basic self esteem level among elderly in both experimental and control group were almost comparable.

Table 2 : Showing the Effectiveness of SEP on self esteem within the group

Group	Mean	Standard Deviation (SD)	Mean difference	SD Difference	t value	p value
Experimental Pre test	16.77	4.58				
Post test	20.3	3.39	3.53	1.19	-5.62	0.001*

*Significant at 0.05 level

Table 2 reveals that the mean pre test and post test self esteem score of experimental group were 16.77 and 20.3 respectively. The difference of 3.53 between the two means on self esteem was indicated that there was a significant increase in self esteem score of experimental group after SEP (t value = -5.62, p value = 0.001)

Table 3 : Showing the Effectiveness of SEP on self esteem between the groups

Group	Median	Inter-quartile range	z value	p value
Experimental Post test	21.5	3.25	6.22	0.001*
Control Post test	20	6		

*Significant at 0.05 level

Table 3 presents the median post test self esteem score of experimental and control group were 21.5 and 20 respectively. It was found that there was significant difference in the self esteem score of institutionalized elderly in the experimental and control group (z value = 6.22, p value = 0.001)

Most of the sample characteristics were almost equally distributed in experimental and control group except for perceived health status. Majority of the sample in the experimental group (56.7%) were perceived as healthy; whereas in control group (36.7%) it was moderately low. SEP was found to be effective in improving the self esteem of institutionalized elderly within (t value=-5.62, p value=0.001) and between (z value=6.22, p=0.001) the group. Self Enhancement Programme is an effective method to improve self esteem among institutionalized elderly.

Discussion

The present study findings revealed that Self Enhancement Programme (SEP) is effective in improving the self esteem of

institutionalized elderly (z value=6.22, p value=0.001). Similar findings were reported by a previous study done in Coimbatore among 20 institutionalized elderly in order to find the effectiveness of individualized reminiscence therapy on self esteem. The result revealed that there was an increase in mean self esteem score of five and it was found to be effective in improving self esteem (t value=-8.56, p<0.01).

Another study which was conducted in nursing home of Rasht (north of Iran) also supports the present study findings (Shahbazzadeghan *et al.*, 2010). The aim of the study was to determine the effect of the regular exercise programs on the self-esteem among 32 elderly. There was an increase in mean self esteem score from 22.81±4.84 to 26.84±4.35 after exercise program which was statistically significant (p< 0.001). So the study concluded that doing exercises is effective in increasing self-esteem.

The present study findings contradict the earlier study (Wang, J.J., 2004) which was conducted to examine the effects of reminiscence on self esteem of elderly people residing in community care facilities and at home. The study revealed that there was no statistical significance found in self esteem after the intervention in the experimental group (p > 0.05), but slight improvement was found.

Implications

The study has implications in various areas such as nursing practice, nursing education, nursing administration, and nursing research. Nurses play a major role in promoting mental well being in older adults. Promoting a balanced, active, and social life style through effective adjustment to life's physical, social, emotional, and spiritual challenges are the primary role of nurses. The present study clearly pointed out the effectiveness of SEP on self esteem among elderly. SEP is a cost effective and simple method to improve self esteem with minimum harmful effects. So it can be implemented in various nursing homes by nursing personnel.

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Malnutrition and Risk of Malnutrition among Elderly

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ABSTRACT

This study was undertaken to understand the nutritional status of elderly through Mini Nutritional Assessment (MNA) using the information from 962 elderly population of aged 60- and over in Jodhpur city. Findings reveal that as age increases risk of malnutrition also increases while decrement in income status shows increment in malnutrition/risk of malnutrition. Malnourished subjects were > 2 times in lower income group than middle income group. Nearly 50 per cent of the subjects were at risk of malnutrition in LIG which was higher than the HIG (29.5%) and MIG (33.3%). The study shows that risk of malnutrition was more among females (42.2%) than males (32.9%) while number of malnourished males (12.34%) was greater as compared to females (8.6%). The study revealed that fewer elderly (10.49%) were malnourished, as defined by MNA < 17, than those assessed underweight according to the BMI < 18.5 (15.67%). From the chi square test, it was found that respondent's age and income significantly affect the MNA scores of the aged population.

Key words : Elderly, Malnutrition, MNA, Nutritional Status

In the past years, interest in the nutritional status of the elderly has markedly increased because of the increasing number of elderly people in the general population and its implication for health care with increasing life expectancy resulting in a rising proportion of elderly in all populations. Increasing importance is being attached to improving

the quality of life in the elderly so that the rise in life expectancy should not be accompanied by a proportionate increase in life with disabilities. It is generally accepted that the elderly are more likely to suffer from nutritional deficiencies than any other population group. Although the concept of subclinical malnutrition is not very well defined, there are reasons to believe, a marginal dietary intake may aggravate both physical and mental health. Malnutrition is a widespread but largely unrecognized problem in aged more so as it is a contributing factor to the increased morbidity and mortality in this age group. Many scales have been proposed for the brief nutritional assessment of older persons, with the goal of increasing under nutrition detection and the detection of nutritional risk. Mini Nutritional Assessment (MNA) is one of them which is simple, noninvasive, well validated screening tool for the detection of malnutrition in elderly persons and is recommended for early detection of risk.

Material & Methods

The data were collected from a survey conducted in the urban areas of Jodhpur city (Rajasthan). Information was collected from 962 elderly (60 and over) by questionnaire and interview method. The subjects were selected from the places like temples, gurudwara, mosques, corporate sectors, retired people's club, parks and slum pockets. On the basis of their previous occupation all elderly were categorized into high, middle and low income group. Managers, doctors, professors, section officers and industrialists were included in high income group (HIG). School teachers, senior draftsmen, UDC, LDC, clerk and shop keepers were included in middle income group (MIG) while low income group (LIG) consisted of those with occupations such as attendants, peons, labourers, daily wagers and those with petty business.

The high income group consisted of 288 (160 male and 128 female) geriatric persons, middle income group of 318 (160 male and 158 female) and 356 subjects (166 male and 190 female) belonged to the low income group.

The information regarding the nutritional status of the elderly was recorded using the tool – Mini Nutritional Assessment (MNA). The MNA form is an assessment tool that can be used to identify geriatric's

nutritional status. The MNA provides a simple and quick method of identifying patients who are malnourished or at the risk of malnutrition. The validity of MNA has been examined by many authors (Guigoz and Vellas, 1997; Chen, 2004; Delacorte *et al.* 2004; Guigoz, 2006; Vellas *et al.* 2006).

The MNA is an 18 item questionnaire comprising anthropometric measurements (BMI, mid arm and calf circumference, and weight loss) combined with a questionnaire regarding dietary intake (number of meals consumed, food and fluid intake and feeding autonomy), global assessment (life style, medication, mobility, presence of acute stress, and presence of dementia or depression), and a self assessment (self-perception of health and nutrition).

The MNA is a two step procedure

- (i) **MNA-SF :** The MNA-Screening Form (SF) quickly screens subjects using six questions and takes about three minutes. Those who score > 12 out of a possible 14 points have satisfactory nutritional status and require no further screening.
- (ii) **Full MNA :** The full MNA must be completed if the MNA-SF is positive for malnutrition risk (score < 12 out of the possible 14 points). The full MNA takes about 10 to 15 minutes. The additional twelve questions have a maximum possible score of 16. Combining the scores of the MNA-SF and the remaining twelve questions gives the full MNA score or malnutrition indicator (max. 30 points). Less than 17 point is regarded as indicating malnutrition. Between 17-23.5 points indicate a risk of malnutrition, 24 points indicates that the person enjoys a well nourished state.

Data analytic method envisaged in this paper are percentage distribution, correlation and chi square analysis.

Results and Discussion

According to MNA scale, nutritional status of elderly by sex is presented in Table 1. Of the study group, a total of 101 (10.4%) were assessed to be malnourished (MNA < 17 points), 361 (37.52%) fell in the risk zone for malnutrition (17-23.5 points) and 500 (51.97%) were well nourished. The average MNA value of the aged population studied was 22.96.

The sex-wise analysis revealed that among the males 12.34 per cent were malnourished, 32.92 per cent at risk of malnutrition and 54.73 per cent were well nourished, for females these values were 8.61 per cent, 42.22 per cent and 49.15 per cent respectively, which reveals that number of malnourished males (12.34%) were higher as compared to females (8.61%) while more females than males were in the category of at risk of malnutrition. Higher number of males were well nourished than females. About half of the total aged of both sexes was found to be well nourished (Table 1).

Table 1 : Gender wise nutritional status (MNA) of elderly(%)

Nutritional Status	Males (N=486)	Females (N=476)	Total (N=962)
Malnutrition	12.34	8.61	10.40
At risk of Malnutrition	32.92	42.22	37.52
Well Nourished	54.73	49.15	51.97

$$X^2 = 10.17, df = 2, P < 0.01$$

Table 2 : Nutritional status (MNA) of elderly (%) according to age group (in years)

Nutritional Status	60-64 (N=362)	65-69 (N=305)	70-74 (N=156)	75-79 (N=72)	80 and above (N=67)
Malnutrition	5.52	8.85	10.89	20.80	32.83
At risk of malnutrition	36.46	34.42	40.38	41.66	46.26
Well Nourished	58.01	56.72	48.71	37.50	20.89

$$X^2 = 70.96, df = 8, P < 0.001$$

Age wise nutritional status (through MNA) of elderly are presented in Table 2. A lower proportion of elderly (5.52%) with malnutrition was found in 60-64 years age group while higher (32.83%) in 80 years and

above, with corresponding figures for 65-69 years, 70-74 years and 75-79 years were 8.85 per cent, 10.89 per cent and 20.8 per cent, respectively. It was noted that malnutrition increased with age. After age of 75 years the increment in malnutrition was double and after 80 years it was 3 times greater than the 70-74 years age group.

Maximum number of subjects (46.26%) were at risk of malnutrition in the age group of 80 years and above while in the age group of 70-74 years (40.38%) and 75-79 years (41.66%) about same number of elderly were at risk of malnutrition. Slightly lower number of aged (34.42%) were at risk of malnutrition in 65-69 years compared to 60-64 years age group (36.46%). Only 20.89 per cent elderly had normal nutritional status in the group of 80 years and above while, 58.01 per cent in 60-64 years age group, followed by 56.72 per cent in 65-69 years, 48.71 per cent in 70-74 years and 37.50 per cent in 75-79 years. It was found that as age increased number of with well nourished subjects decreased and prevalence of malnutrition increased.

Considering the income groups' the average MNA scores of all the elderly irrespective of sex and age in the HIG, MIG and LIG were found to be 24.8, 23.51 and 21.49 per cent respectively. Comparing the nutritional status of elderly men and women as per their income group it was found that in HIG 4.37 per cent elderly males were malnourished which was almost half of the malnourished males of MIG (8.75%). Nearly 3 times higher malnourished males were observed in LIG (23.49%) as compared to MIG. Like wise, approximately 2 times and 6 times higher malnourished females were from LIG (14.21%) as compared to MIG (6.96%) and HIG (2.34%), respectively. 28.13 per cent of males from HIG and nearly equal number of males were noted in MIG (37.5%) and LIG (37.34%) to be at risk of malnutrition. Highest number of females from LIG (56.84%) were observed at risk of malnutrition while about 51% were each from HIG (31.25%) and MIG (33.54%).

Almost 10% more, well nourished males belonged to HIG (67.5%) than MIG (58.13%). The findings were same among the females, as 66.4% of them, from HIG were observed well nourished. The number of well nourished females from LIG (28.94%) was almost half than those of the MIG (57.59%) females.

Overall MNA scores of elderly from three income groups indicate that, 3.47 per cent, 7.86 per cent, 18.53 per cent were malnourished belonging to HIG, MIG and LIG, respectively. Malnourished subjects were > 2 times in lower than middle income group. Nearly 50 per cent of the subjects were at risk of malnutrition in LIG which was also higher than the HIG (29.5%) and MIG (33.3%). It was seen that as income status decreased malnutrition and risk of malnutrition increased. As high as 67.01 per cent elderly of HIG were well nourished which was twice of the LIG elderly (33.7%) while 58.8% aged of MIG enjoyed well nourished state. The data indicates that with the improvement in the income status the number of aged in well nourished state also increased.

A critical risk factor of malnutrition among older is their declining need for energy due to a reduction in the amount of lean body mass and a more sedentary life style (Volkert *et al.*, 1991). BMI is a component of the MNA and reflect one's general nutritional status. In the present study according to BMI 14.61 per cent of males and 16.8 per cent of females were malnourished where as lower percentage of males (12.34%) and females (8.61%) found to be malnourished according to MNA (Table 3).

Table 3: Malnutrition among elderly according to BMI and MNA

Malnutrition Indicator	Males	Females	Total
BMI < 18.5	14.61%	16.8%	15.67%
MNA score < 17	12.34%	8.61%	10.49%

Malnutrition has a multifaceted pathogenesis and in the elderly it is linked with morbidity. Investigations in the present study shows that one third of the elderly in the age group of 80 years and above were assessed to be malnourished according to MNA scores. The frequency of malnourished (18.35%) subjects and risk of malnutrition (48%) was high in LIG than HIG or MIG. Among all the elderly, risk of malnutrition was found more in females (42.22%) than males (32.92%). In later years of life, economical, psychological and health problems increases while body mass index, food and water intake and mobility decreases. Reduced food intake is due to poor appetite or chewing/swallowing difficulties. So in older groups (after 75 years) subjects eat less than

two whole meals per day. The elderly of LIG also face similar problems. These factors may be responsible for low score of MNA thus, lower nutritional status in oldest elderly and lower income group.

Therefore, the results indicate that as age increases risk of malnutrition also increases while decrement in income status shows increment in malnutrition/risk of malnutrition. Negative correlation was found between age and MNA ($r = -0.29$). With advancing age lower MNA scores were obtained. In the whole group of the elderly, a weak positive correlation was found between MNA and BMI ($r = 0.27$, $P < 0.01$). Significant correlation was noted between MNA and BMI among the males and females of all three income groups. Chi-square test also revealed highly significant association between MNA and age groups. Association between MNA and income groups were highly significant, suggesting MNA and increment in age are dependent. MNA and income groups are also dependent on each other, suggesting income as an important attribute of nutritional status.

In this geriatric group, fewer elderly (10.49%) were assessed malnourished, as defined by MNA < 17, than those assessed underweight according to the BMI < 18.5 (15.67%). In case of females the number of subjects with BMI < 18.5 was double (16.8%) the number of subjects with MNA < 17 (8.61%) while, in males not much difference was found. This variation may be because of the fact that the females of LIG had lower body weight in the study group.

It was found that in all three income groups the subjects with BMI < 18.5 were higher compared to subjects with MNA < 17. The difference was more in HIG. It may be because very few females of HIG had MNA < 17. Overall it was found that more elderly were assessed as underweight (BMI < 18.5) than those assessed as malnourished (MNA < 17). In contrast to present findings, Saletti *et al.* (2000) stated that fewer subjects were assessed as underweight, as defined by BMI, than those assessed as malnourished according to MNA. They also found that MNA and BMI correlated significantly and malnutrition was noted in 36 per cent of the study population.

A study by Lin *et al.* (2007) on geriatric subjects in Singapore found 33 per cent (MNA < 17) were malnourished, 37 per cent were underweight (BMI < 18.5 kg/m²), and 51 per cent were determined by MNA to be at risk of malnutrition. In a Danish population, 21.6 per

cent elderly were at risk of malnutrition and 78.4% subjects were well nourished (Beck *et al.*, 1999).

In the present study more subjects were at risk of malnutrition (37.52%) compared to malnourished subjects (10.4%). The findings are comparable with that of Delacorte *et al.* (2004) which revealed that 13 per cent elderly were at risk of malnutrition while 7 per cent were classified as malnourished, while Cairella *et al.* (2005) found, 60.3 per cent of elderly at risk of malnutrition and 5.1 per cent as malnourished. Ruiz-Lepez *et al.* (2003) also reported 62 per cent at risk of malnutrition and 8 per cent malnourished in their study. According to MNA, 15 per cent of aged were well nourished, 65% at risk of malnutrition and 20 per cent were malnourished in a study by Hengstermann *et al.* (2008). The results of the present study revealed more than 50% of aged, were well nourished, 10% were malnourished and >35 per cent were at risk of malnutrition. A study conducted by Jain *et al.* (2010) in Jaipur also supports the present findings. According to them more elderly people at risk of malnutrition (54.2%) then elderly suffered from the malnutrition (9.1%). Present study showed that malnourished males (12.34%) were higher as compared to females (8.61%). In contrast to present findings Jain *et al.* (2010) found more females malnourished (13.7%) then males (5.8%).

Conclusion and Recommendations

The over all scenario of the nutritional status of the aged population is not found satisfactory. In the light of the above discussions the following recommendations are made:

- The aged should receive special attention. Authorities should identify and assess the size of these groups and the extent to which assistance is required. In this regards, lower income group should receive particular attention to meet their special needs.
- The promotion and implementation of low cost, prevention based initiatives, such as health, nutrition and physical education, could significantly enhance the possibility of maintaining good nutritional status for the elderly.
- Good nutrition and physical activity are health promoting lifestyle approaches in the elderly population. New dietary guidelines for

the elderly should emphasize the value of high quality, nutrition-dense foods.

- Health needs of older persons are multi dimensional. A system of coordinated care needs to be provided instead of person-oriented intervention. Health education programmes should be introduced to understand and create awareness about the health problems amongst the elderly, and help them adopt a healthy life style.

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Economic Inequality and Status of Health among Aged Population in India

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ABSTRACT

There has been growing controversy on the linkages of economic inequality, particularly income inequality, to health- whether it has exclusive impact on health or not. Studies, mostly based on developed nations, have brought the controversy to parallel showing of significant association as well as no association between income inequality and health. This study tries to assess the impact of consumption inequality, as a proxy of economic inequality or income inequality, in the context of India, with health of aged population. Using data from National Sample Survey 60th round collected in 2004, it is observed that consumption inequality is associated positively with perceived poor health and that association is stronger for females. The association, however, remains significant only for middle economic group people, while no association is observed for low and high economic group people.

Key words : Economic Inequality, Health status, Old persons, Female, Consumption inequality

There are contentious literature, particularly based on developed nations, state that economic inequality mainly in terms of income inequality of an area is harmful to health (Waldmann 1992; Wilkinson 1992; Ben-Shlomo *et al.*, 1996; Kawachi *et al.*, 1997; Lynch *et al.*, 1997; Daniels *et al.*, 2000) as found for socio-economic inequality of an individual or household (Smith *et al.*, 1994; Kunst & Mackenbach, 1994; Adler *et al.*, 1994; Macintyre and Hunt, 1997). There are other

studies, however, state that association is either spurious or there is as such no association between income inequality and health (Judge, 1995; Mellor and Milyo, 2001).

Studies showing association between income inequality and health indicate mainly three pathways through which inequality affects health: (1) loss of social cohesion and the erosion of social capital (Wilkinson, 1992 & 1996; Kawachi *et al.*, 1997). Social capital is defined as “features of social life, networks, norms and trust that enable participants to act together more effectively” (Putnam, 1995); (2) under-investment in human capital and other social goods (Davey, 1996); and, (3) relative deprivation that brings frustration and poor health outcome (Wilkinson, 1996; Kawachi *et al.*, 1999; Brady, 2003; Beckfield, 2004; Stewart 2006).

Critiques argue that the association between income inequality and population health may be a statistical artifact of nonlinear relationship between individual income and health (Rodgers, 1979; Gravelle, 1998; Beckfield, 2004). Mostly, conclusions are drawn on the basis of bi-variate analysis without statistical control of other covariates (Judge *et al.*, 1998; Beckfield, 2004). Mellor and Milyo (2001) for example, find that the income inequality-health relationship appears non significant after controlling for covariates to health like level of economic status, time period of analysis, and age and race composition of population etc. Further more, observed associations are based on aggregate data with out taking into account the unobserved heterogeneity bias. Recent study conducted by Beckfield (2004) observes no significant association between income inequality and health when unobserved heterogeneity bias is taken into account through fixed effect model.

In India, nevertheless, while burgeoning literature have tried to establish association between socio-economic status in terms of education (Bhatia and Cleland 1995; Addai, 1998), household living condition (Shelah *et al.*, 1999), household income (Kavitha and Audinarayan, 1997), and occupation (Miles and Brewster, 1998) to health, research on linking economic inequality to health is limited. Even in my knowledge there is no study in India which specifically has tried to link economic/income inequality of an area to health.

This paper aims at examining the association between economic inequality of an area in terms of per capita consumption expenditure and health using National Sample Survey data (NSS), taking control of covariates to health using multivariate statistical technique for old aged population in India. This study is limited to only old aged population since NSS data gives information of self-perceived health for this age group (60+ years) and the self perceived poor health is found to be negatively associated with socio-economic status (Dhak, 2009). NSS data also gives information on morbidity prevalence (illness for 15 days reference period) and incidence rate (illness at the day of survey), but that information is affected by perception bias; people report their illness based on their perception and knowledge about illness which result in positive association between socio-economic status and morbidity prevalence/incidence rate (NSSO, 1998, 2006). To avoid that ambiguity this paper does not include morbidity prevalence/incidence rate as measure of health outcome and total population as unit of analysis.

Methodology

Data

Data for this study has been drawn from the National Sample Survey (NSS), 60th round, collected by the National Sample Survey Organization (NSSO). The survey was conducted between January and June 2004 and collected information on ‘morbidity and health care’ at the request of Health and Family Welfare of India (NSS report no 507, NSSO, 2006).

The sample design for collecting the 60th round data was essentially a two-stage stratified, with census villages and urban blocks as the first-stage units (FSUs) for the rural and urban areas respectively, and households as the second-stage units (SSUs). The survey period, January - June 2004, was split up into two sub-rounds of three months each. The rural and urban samples of FSUs were drawn independently in the form of two sub-samples and equal numbers of FSUs of each sub-sample were allocated for the two sub-rounds. The number of villages and that of urban blocks actually surveyed were 4,755 and 2,668 respectively and the numbers of households surveyed in the rural and

urban areas were 47,302 and 26,566, respectively. Therefore, total numbers of 73868 households were surveyed in the 60th round NSS. The survey provides information for all the household members of the selected sample households. The total numbers of household members covered in that survey were 3, 83, 338. However, this study is based on only old aged population (60+) which accounts for total 34,831 household members. This survey mainly covered three aspects of information; morbidity and utilization of health care services including immunization and maternity care; health and socio-economic status of aged people; and expenditure of the households for availing health care services. For this study, data relating to health status and socio-economic status of aged people (60+) have been used.

Dependent variables

The dependent variable used in this study is self assessed health. Self-assessed health is respondent's subjective assessment about his/her health; combines biological, psychological and social elements to shape a person's perception about his/her own health. Self-assessed health has been proved to be reliable measure of overall health and has been acknowledged by WHO as an instrument monitoring health surveys (De Bruin *et al.*, 1996). In the NSS survey, one old aged person was asked to state his or her status of health into three categories: 'very good', 'good' and 'poor'. In the analyses self-assessed health has been made dichotomous as good self-rated health (those who reported very good or good health) or poor.

Control Variables

There are several control variables those can influence health used in this study following earlier literature (Arber & Cooper, 1999; Macintyre *et al.*, 1999; Smith, *et al.*, 1994; Dhak 2009; Mason, 1992). The variables include age, sex (male, female), marital status (never married, currently married, widowed/divorced), place of residence (rural, urban), caste (scheduled caste, tribe, other backward class), religion (Hindu, Muslim, and Others), education (single year of education), living arrangement (living alone and living with family members), and economic independence (independent or dependent on others).

Explanatory variable

Inequality in household consumption expenditure is taken as an explanatory variable for which association is examined with health outcome. Household consumption expenditure is the sum total of monetary value of food items consumed in a household in the last one month from any sources such as household produced goods, gifts, free collections and purchases from market. Inequality in consumption expenditure has been measured by Gini coefficient- the most commonly used measure of inequality, particularly for income. Gini coefficient is calculated as the ratio of areas between the 45-degree line and the observed Lorenz curve to the total area below the 45-degree line; value ranges from 0 to 1, with higher value indicating higher level of inequality. For this study, 78 inequality indices have been estimated since country is divided into 78 regions. Each State or Union Territory (UT), for the purpose of socio-economic survey, is divided into one or more agro-climatic regions by grouping contiguous districts which are similar with respect to population density and crop pattern. The only exception is Gujarat, a state in India, where some districts are sub-divided for the purpose of region formation on the basis of location of dry areas and the distribution of tribal population in the State. The formulae for measuring Gini coefficient;

$$Gini = \frac{1}{2N^2\mu} \sum_{i=1}^N \sum_{j=1}^N |y_i - y_j|$$

N represents the number of households of a region, μ is the mean household income, y_i symbolises household "i", and y_j symbolises household "j".

Statistical tool

Ordinary Least Square (OLS) and Logit regression models have been used in the analyses. OLS model has been used for aggregate data- region wise measures of selected variables. Logit regression has been used while using individual data. Since self reported health is a dichotomous variable with '1' and '0' implying reporting poor health and good health respectively, logit regression has been used in assessing

association between consumption inequality and self assessed poor health. For k explanatory variables and n number of individuals, the model expression is;

$$\text{Log} [P_i / 1 - P_i] = \alpha + \beta_1 X_{i1} + \beta_2 X_{i2} + \dots + \beta_k X_{ik}$$

Where P_i is the probability of reporting poor health, i.e. $Y_i = 1$.

Results

Table 1 presents descriptive statistics of variables used in this study. The variables comprise various demographic and economic characteristics of old aged population and consumption inequality across regions which are essentially Gini coefficients. It is, in general, observed that majority of old aged people in India are illiterate (61 per cent), economically dependent on others (65 per cent), staying mostly in rural area (64 per cent) with their family members (84 per cent) and, with considerably higher self perceived poor health (25 per cent). The average per capita monthly consumption expenditure is found to be low (740 rupees per month) with very high inequality among households (Standard deviation= 657; Min=60 and max=25500). Gini coefficients (multiplied with 100) showing consumption inequality across regions also appear high (mean 29.47). As far as demographic characteristics are concerned, mean age is 68, percentage of currently married and widowed/divorced are 60 and 39 per cent respectively and, 51 per cent are males.

The effects of consumption inequality on perceived poor health from aggregate data.

Aggregate health status of a region has been measured by the proportion of individuals reporting poor health. The association between aggregate health measure and consumption inequality has been examined using ordinary least square (OLS) method. In this exercise, taking control of average per capita consumption expenditure of an area, it is seen that consumption inequality is positively associated with perceived poor health (Table 2) at 10 percent level of significance. Therefore, aggregate data gives indication that economic inequality of an area has some negative impact on health.

Table 1 : Descriptive Statistics of Variables

Continuous Variables	Description	Mean	Std. Dev	Min	Max
HH consumption expenditure	Expenditure of a month	740.20	657.50	60.40	25500.10
Age	Age in single year	68.30	11.70	60.10	110.00
GINI coefficient*100	GINI of household expenditure	29.40	01.90	23.50	36.20
Categorical variables		Percentage Distribution			
Health					
Self perceived poor health		25.20			
Self perceived good health		74.80			
Sex					
Male		51.10			
Female		48.90			
Caste					
ST		09.40			
SC		15.10			
Others		75.50			
Religion					
Hindu		80.30			
Muslim		10.50			
Others		09.20			
Place of Residence					
Rural		63.90			
Urban		36.10			
Marital status					
Never married		01.30			
Married		60.20			
Widowed/divorced		38.50			
Literacy					
Literate		38.80			
Illiterate		61.20			
Working status					
Working		55.30			
Not working		44.70			
Economic Independency					
Independent		35.10			
Dependent		64.90			
Living Arrangement					
With family members		84.40			
Alone		15.60			

Table 2 : OLS models Using Aggregate Measures

Variables	Coefficient	Std error	P value
Gini*100	0.01 _c	0.01	0.05
Per capita expenditure (log)	-0.06 _b	0.03	0.04
Constant	1.16	0.11	0.01

Note: 'b' and 'c' denotes coefficients are significant at 95 per cent, and 90 per cent level of confidence interval

The effects of consumption inequality on perceived poor health from individual data

Table 3 presents coefficients from logit regression model on probability of reporting poor health by consumption inequality (Gini coefficient*100) and other selected variables. Expectedly, higher socio-economic status in terms of education, economic independence, higher consumption expenditure, staying in urban area are negatively associated with reporting poor health; coefficients of all these variables with probability of reporting poor health appears negative and all are statistically significant. Co-residence is also found to be very important aspect for being in good health for old aged people; living with family members is found statically significant in lowering perceived poor health. The consumption inequality expressed by Gini coefficient is found to have significant (99 per cent level) positive association with reporting poor health and that association remains intact after controlling for all other confounding factors to health. This result, therefore, clearly indicates that consumption inequality has exclusive impact on health. However, it is to be noted that socio-economic characteristics of an individual are more important for perceived health than the area level economic inequality since individual characteristics are found to be stronger predictor of health. Per capita consumption to economic independence and living arrangement show stronger association with health than consumption inequality. While coefficient for inequality appears 0.022, the coefficient for per capita expenditure, economic independency and living arrangement comes -0.271, -0.770 and -0.222 respectively- all are quite high and significant at 99 per cent level.

Table 3 : Estimated coefficients and standard errors from logit regression model of the probability of reporting bad health.

Variables	Coefficient	Std error	P value
GINI*100 (Consumption inequality)	0.02 _a	0.01	0.00
EXP (log)	0.027 _a	0.03	0.00
Age	0.06 _a	0.02	0.03
Education	0.02 _a	0.01	0.00
Place of residence (Rural=1; Urban=0)	0.14 _a	0.03	0.00
Economic Status (1=dependent; 0= independent)	0.77 _a	0.03	0.00
Living arrangement (1= Alone; 0= with family member)	0.22 _a	0.07	0.00
Constant	-3.82 _a	0.28	0.00

Note:

- (1) Caste, religion, marital status, place of residence are taken into controlled Standard errors are given in the parentheses
- (2) 'a' denotes coefficients are significant at 99 per cent level of confidence interval,

Gender Differences in the Association between consumption inequality and perceived poor health from individual data

The association between consumption inequality and perceived poor health can have gender divide. In other words, the negative impact of economic inequality can differ from male to female. Analyses have been carried out, presented in table 4, to check whether there is any gender divide in the association between economic inequality of an area and perceived poor health. It is seen that there is a difference in the impact; it is stronger for females as compared to males. While the coefficient for females appears 0.024, for males it is 0.018, and both are significant at 95 per cent level of confidence interval. There are also differences in the coefficients of other variables: on the one hand, higher consumption expenditure, staying in urban areas are more beneficial for improved health for females as compared to males; on the other hand, lack of education, economic dependency and living

arrangement as staying alone are more important for males' health. This type of result is expected given the Indian scenario where males are considered to be bread winner, males are economically self sufficient in greater extent than females, live major part of their life with family members at least with their wife since males are married to a younger female and female's longevity is also more as compared to males. It is expected that deviation from the usual trend/status of a male would bring more deprivation as well as poor health than a women; and, females may have weaker impact since they are expected to be habituated/mentally prepared being economically dependent on husband/son and may have to stay alone as a widowed.

Table 4 : Estimated coefficients and standard errors from logit regression model of the probability of reporting poor health by sex

Variables	Male			Female		
	Coeffi- cient	Std error	P value	Coeffi- cient	Std error	P value
GINI*100	0.02	0.02 _b	0.05	0.02	0.01 _b	0.02
EXP (log)	-0.22	0.04 _a	0.00	-0.28	0.04 _a	0.00
Age	0.06	0.00 _a	0.00	0.06	0.00 _a	0.00
Education	-0.04	0.03 _a	0.00	-0.02	0.03 _a	0.09
Place of residence (Rural=1; Urban=0)	-0.09	0.05 _c	0.05	-0.20	0.04 _a	0.00
Economic Status (1=dependent; 0= independent)	-0.97	0.04 _b	0.00	-0.44	0.06 _a	0.00
Living arrangement (1= with family member; Alone=0)	-0.25	0.13 _b	0.05	-0.09	0.080	0.21
Constant	-3.04	0.44 _a	0.00	-4.18	0.40 _a	0.00

Note:

(1) Caste, religion, marital status, place of residence are taken into controlled
Standard errors are given in the parentheses

(2) 'a', 'b' and 'c' denotes coefficients are significant at 90 per cent, 95 per cent and 99 per cent level of confidence interval

Self perceived poor health by Category of Consumption expenditure and it's Inequality

Economic status of an individual is an important factor to influence health. Irrespective of the level of inequality of a region, low economic status of an individual causes higher rate of self perceived poor health. However, the economic inequality of a region shows different picture than inequality of an individual's economic status (Table 5). Unlike individual's economic status, economic inequality of an area does not show consistent association with health. While significant negative association between consumption inequality of an area and perceived poor health is noticed taking inequality as a continuous variable, the association remains intact only for the medium economic group people where people are grouped into three categories according to their per capita expenditure. This picture remains consistent in both bi-variant and multivariate analyses. It is found that only among the medium economic group people higher perceived poor health results with the increase of regional inequality. From the logit model, it can be seen that

Table 5: Percentage of Perceived Bad Health and Odds ratio by categories of expenditure and its inequality

Models	Categories expenditure and inequality	Perceived Bad Health (rate)	Results from Logit regression		
			Odds ratio	Standard Errors	P Value
1	Low exp & low inequality	29.13	1	-	-
	Low exp & medium inequality	29.87	0.90	-0.06	0.64
	Low exp & high inequality	30.35	0.91	0.06	0.83
2	Medium exp & low inequality	23.76	1	-	-
	medium exp & medium inequality	26.05	1.13 _b	0.04	0.03
	medium exp & high inequality	26.09	1.18 _b	0.05	0.00
3	High exp & low inequality	22.62	1	-	-
	High exp & medium inequality	20.03	1.02	0.06	0.08
	High exp & high inequality	20.60	1.01	0.05	0.08

Note: (1) In each model all other confounding factors are taken into control.

(2) 'b' denotes coefficients are significant at 99 per cent level of confidence interval

people belonging to medium and high inequality area report 13 per cent and 18 per cent higher perceived poor health respectively compared to low inequality area among medium economic group people. For others- low and high economic group- no significant association has been found for economic inequality of an area and health in both bi-variant and multivariate analyses.

Discussion

Using data from National Sample Survey 60th round, this paper examines whether economic inequality of a place influences health or not in the context of India amongst old aged population. Further, attempt has also been taken in identifying gender differences in the association between inequality and health. First OLS regressions for aggregate data, then logit regression model for individual data, have been used to examine the determined objectives taking probable confounding factors into control.

Keeping consistency with evidences based on earlier studies, particularly in developed nations (Waldmann, 1992; Wilkinson, 1992; Ben-Skloma *et al.*, 1996; Kawachi and Bruce, 1997; Lynch *et al.*, 1997; Daniels *et al.*, 2000), results of this paper indicate that area level economic inequality of a region has noticeable impact in shaping health status. This result appears for both types of data- aggregate as well as individual. The result of this paper deters from findings of many researches that the magnitude of impact of area inequality from aggregate data fades away when individual or household income is taken control. It has been observed, across all types of data sets, that impact of area inequality in consumption expenditure on health remains intact after controlling for household per capita consumption, and also for other covariates to health. However, the impact of area level economic inequality to health is not uniform between sexes; females are more affected by an areas' economic inequality with respect to self perceived health as compared to that of males. This might appears out of females' more attachment to an area and the relative deprivation of economic inequality may be stronger for females than males or females look economic inequality more seriously than what males do.

Studies have found that women find more problem than men in the context of neighbourhood in terms of pollution, lack of facilities, poor reputation of the neighbourhood etc. (Mohai, 1997; Stafford *et al.*, 2005), and perception about the local environment is also associated with health (Sooman and Macintyre, 1995; Stafford *et al.*, 2001).

The most interesting picture appears with the significant association between inequality and health for medium expenditure group people only- no association has been observed for low and high expenditure groups. There are two versions of economic (income) inequality hypothesis: area level economic inequality will affect all members of a society (Strong hypothesis), and it may affect only poor (Weak hypothesis). However, result from this study falls none of these groups- inequality neither affects poor nor all people but only to mediocre families. At this point no firm reason can be put to explain such a result; only assumption can be drawn that middle economic group may feel relative deprivation of area economic inequality more strongly or feel it as a social problem more strongly as for females mentioned above, or this result appears out of mere statistical artifact as pointed out in several other studies (Rodgers, 1979; Gravelle, 1998; Beckfield, 2004).

Conclusion

This paper shows statistically significant association between area level economic inequality in terms of per capita consumption expenditure and the health status among middle economic group old aged people using both individual and aggregate level data, and there is gender divide in the association too- impact is stronger for females than males. But, despite noticeable association, suggestion would be replication of this type of research using different data sets and health outcomes to reach in firm conclusion about the relationship, particularly why association appears among middle economic group people, not among others. At the end, it is also required to be noted that improvement of socio-economic status and family support are more essential than reduction of an area level inequality for improved health since earlier factors dominate over later in reducing poorer health and that result is consistent for all people.

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Consumption Expenditure among Elderly and Non-Elderly Households

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ABSTRACT

The paper aims to test the hypothesis that the economic condition of elderly living alone or with spouse is not significantly different from non-elderly households. For this purpose the consumption expenditure data from 60th round of National Sample Survey was used and monthly per capita consumption expenditure (MPCE) was estimated by adjusting the household size and composition. The sample was divided into three groups, namely, elderly living alone or with spouse only, elderly living with other household members and non-elderly households. Results show that by adjusting for a minimum size effect of 0.7 and assigning a weight of 0.5 to children below 5 years, 0.75 for children 6-14 years and 1 for adult, there was no significant difference in MPCE among elderly and non-elderly households. Similarly, using the consumption, poverty line adjusted for the household size and composition, we found that poverty among elderly living alone or with the spouse was highest vis-a-vis the other two groups. Based on the findings we suggest that social security measures should consider the living arrangement of elderly.

Key wordsc : Poverty, Demographic structure, Monthly per Capita Consumption Expenditure.

Population ageing is evident in many parts of the world and India is no exception. Ageing process in the country has gained pace in recent times. The proportion of population 60 years and above has increased from 6.58 percent in 1991 to 7.5 percent in 2001 and expected to reach

11 percent by 2021 (RGI, 2006). During 1991-01, the growth rate of elderly population was 3.04 percent, compared to 1.8 percent for the total population. The rapid increase in the proportion of elderly population is accompanied by changes in the social, economic and demographic structure of society. There is breakdown of joint family system which was once a principal institution to provide care and support to elderly. In addition to this, factors like fewer numbers of children to take care of elderly due to wide acceptance of small family norm, migration of the younger generation and increased participation of women in economic activities are making elderly more vulnerable (Knodel *et al.*, 1992, Rajan *et al.*, 1995). A number of studies have documented the economic insecurity among elderly in the absence of co-residence with their children (Panda, 1998; Rajan and Kumar 2003; Mohanty and Sinha 2008). At the same time mechanisms of public support such as social security system are not in place (only 10 percent of the elderly in India are covered under any pension scheme) and this could cause increased destitution among elderly.

In India, the National Sample Survey (NSS) collects periodic data on consumption expenditure in various rounds. Based on the total consumption expenditure of the household, the Monthly Per capita Consumption Expenditure (MPCE) is computed. The MPCE is widely used to explain the economic differentials and to estimate the poverty level in the population sub-groups. However, the MPCE is not adjusted for household size and composition. The economies of size imply that the larger households tend to have comparative advantage in their standard of living over smaller households. The effect of demographic composition of the household is attributed to the fact that the consumption needs of the children and adult are not identical.

With demographic transition, the age structure and family size are fast changing and hence the effect of the demographic structure of the household in estimating household poverty is gaining importance in recent times. It has been argued that the consumption expenditure and the poverty level of the households varies by the size and the demographic composition of the households (Meenakshi and Ray, 2002; Pal and Palacios, 2006). Various studies have revealed that choice of equivalence scale can sometimes systematically affect absolute and relative levels of poverty (Buhmann *et al.*, 1988). Therefore, there is an urgent need to adjust the only direct measure (MPCE) for assessing

the economic status of a household, to arrive at scientific and unbiased estimates in context of a developing country like India.

It has been well documented that older population faces a higher incidence of poverty and economic insecurity compared to the other groups (Barrientos *et al.*, 2003, Mujahid *et al.*, 2008). Therefore, reduction in incidence of poverty among elderly has important implications on overall poverty in the country. However, poverty measurement among elderly suffers from data constraints and methodological problems. In India, though we have periodic data on poverty estimates for the total population but no such estimates are provided for elderly population. In absence of any official estimates of elderly poverty it is very difficult for the planners and policy makers to chalk out policies and programs for the well being of elderly.

Studies on economic status of elderly compared to non-elderly are inconclusive. Deaton and Paxson (1995) and Pal and Palacios (2006) using the consumption expenditure data of National Sample Survey (NSS) concluded that “households with elderly are less poor than others” even after adjusting for equivalence scale and size economies in consumption. They attributed the differences to the possible *survivorship bias* due to positive correlation between household incomes and life expectancy and the demographic composition of the households. Using the data of National Family Health Survey (NFHS) -3, Mohanty and Sinha found that elderly residing in nuclear household are the poorest (with respect to economic proxies) compared to elderly living in non-nuclear households or households without elderly (Mohanty and Sinha 2009). Based on cross country studies, Barrientos *et al.* (2003) viewed that old age poverty is a significant issue in developing countries. Rajan and Kumar (2003), using data from the NFHS 2, highlighted the economic insecurity of the elderly in the absence of co-residence with their children. Panda (1998), in his study in rural Orissa found that the economic status of the households with elderly is lower to that of the total households and emphasizes on the need of additional socio economic support by the government for these families. Visaria (2001) outlined the healthcare needs of the elderly and mechanisms available to meet those needs.

In this context an attempt has been made to understand the relative economic condition of the elderly living with and without household members, and non-elderly households. We hypothesize that adjusting

for household size and composition, there is no significant difference in the poverty status of households where elderly live alone or with spouse, households where elderly live with other members and non-elderly households. We have estimated the consumption poverty at national level for three groups of households but restrain from estimating the poverty at the state level as the sample size does not permit to estimate the incidence of poverty by sub-groups.

Data and Methodology

Data: The present study utilises data from 60th round of National Sample Survey (NSS) India, conducted during January to June 2004. The NSS collects socio economic data through nationwide sample surveys employing a stratified multistage sampling. The 60th round collected data on, ‘Employment and Unemployment’, ‘Morbidity and Health care’; and ‘Household Consumer Expenditure’ which was a part of annual series of the survey. The survey used mainly two types of schedules, namely, schedule 10 (Employment and Unemployment) and schedule 25.0 (Morbidity and Health care). The study used schedule 25.0, which broadly covers morbidity and utilisation of health care services, services including immunization and maternity care, problems of the aged persons and expenditure of the households for availing the health care services. It consists of 16 levels and 11 blocks. Each block comprises of one or more levels. Block 3, block 4 and block 6 has been used specifically for the study purpose. Block 3 provides information on household characteristics, block 4 provides information on the demographic particulars of the household member and block 6 provides information on persons aged 60 years and above. We have used the household consumer expenditure during last 30 days (Question no. 21 of block 3) to assess the well being of the households. Further living arrangement was used to derive two groups of elderly, namely elderly living alone or with spouse and otherwise (Question no 9 of block 6). These two variables provide the basis of analysis in the study. We have used population weights for analyses purpose which have been obtained by multiplying the weights provided in the data set and the household size.

Methods : We have estimated the consumption poverty among households by combining the living arrangements of elderly. We have classified the households into three groups, namely, elderly living alone

or with spouse, elderly living with children and others and non-elderly households. We have further derived four alternative consumption variables:

1. Unadjusted Monthly per Capita Consumption Expenditure (MPCE)
2. MPCE adjusted for household size
3. MPCE adjusted for household composition
4. MPCE adjusted for both household size and composition

The equation for deriving the adult equivalent adjusted for economies of scale in its simplest form may be given as:

$$X = Y/A^{\epsilon} \quad \text{..... (1)}$$

Where, X is Per Capita Expenditure, A is the household size and ϵ regulates the degree of household economies of scale. The value of ϵ ranges from **0 to 1**. The closer the value of ϵ to 0, more weight is assigned for household size and the closer the value of ϵ to 1 the less weight is assigned to the value of household size. When $\epsilon=1$, $X = Y/A$ which is same as unadjusted Per Capita Expenditure, therefore there are no economies of scale. When $\epsilon=0$, $X=Y$, there are full economies of scale.

ϵ may be assigned different intermediate values such as 0.2, 0.4, 0.6 0.7 and 0.8. In the study we have used the value of ϵ as 0.7 for adjusting MPCE.

The equation (1) can be extended to take into account the **economies of scale and age composition** as well and is given as:

$$X_{ih} = Y_h / (\hat{a}_1 C_1 + \hat{a}_2 C_2 + A)^{\epsilon} \quad \text{..... (2)}$$

Where X is the standard of living of an individual i living in the household h , Y is the total expenditure of the household. A is the number of adults, C_1 is the number of children under 5 years of age, and C_2 is the number of children between 6 and 14 in the household. Parameters $\hat{a}$ allow for different weights for adults and kids. The different values of $\hat{a}_1$, $\hat{a}_2$ and A have been used. However, for the study we have used the values of $\hat{a}$ as $\hat{a}_1=0.5$, $\hat{a}_2=0.75$ and $A=1$ as suggested by Deaton and Zaidi for adjusting MPCE.

Results and Discussion

Results are presented in two sections namely; (1) mean MPCE by household type, (2) mean MPCE adjusted for demographic composition and by household type.

Mean MPCE by household type

Table 1 summarises the mean MPCE by household type in India and states. The mean MPCE of a household in India was Rs 599 and ranges from Rs. 384/- in Chhattisgarh to Rs. 823/- in Punjab. About half of the states namely, Assam, Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Orissa, Uttar Pradesh, fall below the national average.

Table1: Mean monthly per capita expenditure (in Rupees) classified by type of household in India and major states, 2004

State	StateUnadjusted Mean MPCE (in Rupees)				
	Elderly living alone/ with spouse	Elderly living with other household members	All elderly households	Non-Elderly households	All households
Andhra Pradesh	723	597	612	627	623
Assam	612	521	522	568	557
Bihar	460	426	430	408	414
Chhattisgarh	434	360	365	391	384
Gujarat	1055	728	750	722	730
Haryana	1111	709	719	811	780
Jharkhand	584	468	474	461	465
Karnataka	753	558	566	594	586
Kerala	1335	756	779	839	812
Madhya Pradesh	593	500	506	465	477
Maharashtra	887	687	698	742	728
Orissa	436	388	390	406	401
Punjab	1314	839	859	805	823
Rajasthan	791	568	575	576	576
Tamil Nadu	809	682	697	685	688
Uttar Pradesh	743	503	512	508	509
West Bengal	952	629	638	569	590
India	796	592	602	597	599

The unadjusted mean MPCE was highest for the elderly households living alone or with spouse (Rs. 796/-), compared to households where

elderly live with other members (Rs. 592/-) and non elderly households (Rs. 597/-). The differentials in mean MPCE among all elderly and non-elderly households are not much and vary merely by Rs. 5/- only, indicating that the overall economic conditions of elderly and non-elderly households are similar. However, the differentials were larger in case of rich states like Gujarat, Punjab, Haryana; and Kerala where the proportion of elderly population is large. For example, the mean MPCE for households where elderly live alone or with spouse in Gujarat was Rs 1055/-, compared to Rs 728/- for elderly living with other household members and Rs. 722/- for non elderly households. Similarly, in Kerala the mean MPCE of households where elderly live alone or with spouse was highest (Rs. 1335/-) compared to elderly living with other household members (Rs. 756/-) and non elderly households (Rs. 839/-). However, when we compare the mean MPCE of the elderly households to that of non elderly households we do not find much difference.

MPCE adjusted for demographic size and composition

Different values of theta and alpha were assigned to examine the impact of household size and composition respectively on MPCE at the household level. Table 2 provides the adjusted MPCE for different values of θ and α . For household size (θ) a total of 7 alternative values, ranging from 0.2 to 0.8 were attempted. The unadjusted mean MPCE was Rs 796/- among elderly living alone or with spouse, Rs 592/- among elderly living with children or relatives and Rs 597/- among non elderly households. The mean MPCE was highest for households where elderly live alone or with spouse as compared to the other groups irrespective of place of residence. But the consumption expenditure is sensitive to the household size as large households take advantages of economies of scale. Several examples of scale economies include house rent, utilities such as electricity and purchase of food items. Accordingly different values of theta are assigned. It has been recommended that for transitional economies, a moderate value of theta captures size economies well. As the value of theta moves closer to 1, there are no economies of scale on the other hand, as value of theta approaches towards 0, the adjusted MPCE increases, indicating there are full economies of scale. For example when theta has been assigned a value of 0.8, the mean MPCE for households with elderly live alone or with spouses is Rs 902/- compared to Rs 858/-, for elderly living with other members and Rs 815/- for nonelderly households. However, when

the value of theta is assigned 0.7 or below, the mean MPCE of households where elderly live alone or with spouse becomes lower. For instance, if we consider the value of theta as 0.7, the MPCE for the households where elderly live alone or with spouses is Rs 964/-, compared to MPCE of Rs 1036/- of households where elderly live with other members and Rs 956/- of non elderly households. Similarly, the household composition affects the household consumption. Research suggests that the consumption requirement of the children and adult differ significantly. Different weights have been used to adjust the age composition. Here we have taken the age composition into effect by assigning a weight of 0.4 for children of 0-5 years of age 0.75 for children of 6-14 years of age and 1 for those aged 15 years and above. The change in composition is likely to benefit the non elderly household and elderly living with other household members. After converting the estimates for household composition, the mean MPCE among elderly living alone or with spouse remained the same (Rs 796/-), while that of elderly living with other members was Rs 680/- and Rs 719/- among non elderly households. However, we adjusted the MPCE by assigning $\theta = 0.7$ and α is 0.5 for children of 0-5 years and 0.75 for children of 6-14 years of age.

Table 3 summarises the mean MPCE adjusted for household size and composition in major states of India. After adjusting for household size (θ) and household composition (α), the MPCE was Rs 978/- and Rs 673/- respectively for an average household in India. The adjusted MPCE (both for household size and composition) was Rs 1065/-. The adjusted MPCE was highest for Punjab (Rs 1364/-) followed by Haryana (Rs 1310/-), Kerala (Rs 1279/-) and Gujarat (Rs 1193/-) while, it was lowest for Chhattisgarh (Rs 636/-) followed by Bihar (Rs 711/-). In most of the states except that of Punjab and Kerala, the adjusted MPCE for households where elderly live alone or with spouse was lower, compared to households where elderly live with other members and non elderly households. For example, in case of Andhra Pradesh the adjusted mean MPCE for households where elderly live alone or with spouse was Rs 859/-, compared to Rs 1070/- for households where elderly live with other household members and Rs 1036/- for non elderly households. However, not much differentials were observed when mean MPCE of elderly households was compared to that of non elderly households except Punjab.

Type of household	Percentage of households below poverty line							
	Unadjusted MPCE		$\theta = 0.7$		$\alpha_1 = 0.5, \alpha_2 = 0.75$		α and θ	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Elderly living alone or with Spouses	19.6	16.0	43.2	28.9	29.5	17.1	52.7	29.2
Elderly living with other household members	31.6	27.0	25.0	17.6	32.2	25.6	26.1	18.3
All elderly households	30.9	26.5	26.0	18.2	32.1	25.3	27.6	18.8
Non -Elderly households	33.6	27.3	34.0	23.0	30.9	23.0	31.9	21.6
All households	32.8	27.1	31.6	21.7	31.2	23.6	30.6	20.8

In a nut shell, it can be said that after taking into consideration the household size and composition of the households, overall poverty among elderly living alone or with spouse is maximum compared to elderly living with children or non-elderly households, particularly in rural areas. Hence, the analysis shows that when MPCE is adjusted for household size and household composition the mean MPCE declines sharply in case of elderly living alone or with spouses.

Conclusion :

Elderly living alone or with spouse are the poorest in the country and study recommends that incentives should be given for co-residence of the elderly to encourage non-nuclear households. The programmes and policies should be oriented towards the needs of elderly who are living alone or with spouse. Poverty data should be estimated by integrating demographic structure of the household. Surveys on the elderly should incorporate details about the type of household, and analyze the incidence of poverty by type of household.

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Care and Support During Twilight Years: Perception of Descendants by Their Elderly in Rural Maharashtra

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ABSTRACT

The present paper focuses on the elderly's perception of the younger generation in rural Maharashtra. Data for this study was collected from the rural areas of Amravati district using semi structured interview schedule. For this study 600 males and females were interviewed. Systematic sampling technique was used for data collection. Issues like situation of the aged in the context of respect and care, how the aged and their subsequent generation (their children) perceive ageing, elderly's views and opinions about the young generation have been explored in this study. Further, the impact of various socio-economic characteristics on the perceptions of the elderly towards the younger generation is discussed in detail. Findings reveal that a majority of the elderly respondents perceive ageing as a problem because they cannot do the work they used to do earlier. The results also reveal that elderly people living alone with their spouses develop a more negative perception towards the younger generation as compared to those living with their children. This could be because the elderly feel they have been left alone by their children or relatives to fend for themselves. The study also highlights the need for company of either married or unmarried children to make the elderly feel more secure.

Key words: Elderly, Perception, Younger Generation, Maharashtra.

It is commonly known that in old age, individuals depend on their children as they often have no other alternative. The effects of

modernization, industrialization and urbanization on the society are evident, in part, in the weakening of traditional bonds of the joint family system. This breakdown of the joint family system is more common in urban areas; as it is evolving increasingly into a nuclear family system. The elderly happen to be the main sufferers of the changing social values and family system (Gaur and Kaur, 2004). In today's context of modernization and its associated developments, it is necessary to know not only the perceptions of the elderly about the care and support provided by their children but also those of the younger generation with a view to understanding the current situation particularly in the rural areas.

The spread of consumerism and self-centric attitude of the younger generation have driven them to drift away from their villages in search of comfort and better opportunities in urban areas. In such a situation, the poor and helpless aged parents are left behind alone in the villages, where they feel socially isolated and economically insecure, compelled to lead a life of uncertainty and difficulty (Behara and Mohanty, 2005).

A study by Asharaf (2000) in Kerala finds that there are elderly people who think that the youth today are disrespectful to elderly, consider them a burden, and a hindrance to planning outings, and that they do not give importance to their feelings or they physically abuse them, besides feeling helpless about their being aged. A majority of the elderly without financial/religious engagements perceive ageing as a problem. Similarly, the likelihood of perceiving ageing as a problem is found higher among those who do not have frequent contacts with relatives and friends, being forced to handle depression all by themselves alone, or those who do not enjoy the status as the head of the household and those who are not consulted in the decision making process of the family.

In this context, the present study aims to examine the issue of the perspective of the aged in respect of the young generation. The study also tries to understand the perception of the aged in terms of respect and care they receive from their children.

Objectives

1. To understand the issue of the aged in the context of respect and care.

2. To assess the perception of the aged on ageing of the younger generation.

Method

Sample

According to 2001 census, 11 per cent of elderly are found in rural areas of Amravati district (Maharashtra State), which is very high as compared to the national average (i.e. 7.4 per cent), and also a majority (71 per cent) of the elderly population is living in rural areas (Census 2001).

Keeping in view this fact Amravati district was selected purposively for this study. A three stage sampling design was been adopted with the selection of blocks in the first stage, villages in the second stage and households in the third stage. During the survey information was collected from 571 elderly respondents living in the fifteen villages of Amravati district. One block was selected at random out of 14 blocks in Amravati district in the first stage and all the villages in the selected block were then classified into three categories on the basis of population size i.e., less than 500, 500 to 1000, and more than 1000. Fifteen villages were selected in the final stage from the three categories proportionate to the total number of villages in the particular category. A sampling frame of the aged 60 and above was then prepared for the selected villages by house listing. This was followed by the selection of aged respondents using systematic random sampling method.

Tools Used

The data was collected using pre-tested, semi-structured interview schedule. Detailed information was collected regarding basic socio-economic variables; situation of the aged in the context of respect and care; how the aged and the younger generation (their children) perceive ageing and the elderly's views and perceptions about the young generation has been explored in this study. Further, the impact of various socio-economic characteristics on the perceptions of elderly people on younger generation is also discussed in detail. Chi-square test was used for establishing associations. Multivariate analysis was also used to examine the impact of predictor variables on the perceptions of the elderly about the younger generation.

Results

Respect and Care in Old Age

Questions were asked of elderly respondents in terms of respect and care they provided to their parents and examined whether they felt that they were getting the same respect and care from their children at present. Thirty seven per cent of the elderly reported that they are not getting as much respect and care from their children as they used to provide to their own parents, whereas, 59 per cent of the elderly reported that they do get the same kind of respect and care from their children as had been given to their own parents; however, three per cent of the elderly were found silent about the care provided by their children.

A possible explanation to this kind of silence is that they are not getting proper care and support or that they can't say anything to anyone because if they complain, they may be denied even the present minimum care and support being given.

The study results indicate that around 40 per cent of elderly respondents do not get the same kind of respect and care from their children they used to give their own parents. Further, an attempt was made to look at the background effect on the respondents' opinion regarding their children.

Table 1 displays the distribution by background characteristics of elderly people's opinions about the care and support given by their children as compared to their own parents. By looking at categories of age groups, it becomes clear that more respondents from the 'oldest of the old' (aged 80+) (94 per cent) group are found to have reported their children provide as much respect and care as they used to provide to their own parents. Whereas, more elderly respondents from the 'young old' (aged 60-69 years) group (42 per cent) feel that they are not getting as much respect and care from their children as was provided to their parents. This kind of perception could be taken as an example of the generation gap, societal and value differences between parents and children, which has been on the increase over the last 10 to 20 years due to modernization and urbanization.

Table 1: Percent distribution of elderly according to their children giving as much respect and care as they did for their parents by selected background characteristics

Background Characteristics	Children giving as much Respect and Care as you did for your own Parents			
	Yes	No	Can't say	Total
Age Group				
60-69	55.3	41.5	3.2	347
70-79	59.8	36.0	4.2	189
80+	94.3	5.7	—	35
Sex				
Male	61.3	35.1	3.6	305
Female	56.8	40.2	3.0	266
Marital Status				
Married	63.1	33.4	3.5	344
Widowed/widower	53.3	43.6	3.1	227
Living Arrangements				
Living alone	33.8	57.7	8.5	71
Living with spouse	45.0	45.9	9.0	111
Living with children	67.5	31.7	0.8	379
With other relatives	80.0	20.0	—	10
Type of Family				
Single	25.5	64.7	9.8	51
Nuclear	49.8	46.7	3.5	259
Joint	75.1	23.0	1.9	261
SLI				
Low	51.0	43.4	5.6	198
Medium	65.2	32.1	2.7	224
High	61.1	37.6	1.3	149
Economic Status				
Independent	53.8	41.2	4.9	325
Dependent	66.3	32.5	1.2	246
Total	59.2	37.5	3.3	100.0
	(338)	(214)	(19)	(571)

Note : 29 elderly were not having children.

The elderly from the oldest of the old group have reported that they are getting more care and respect from their children because of the fact that their children are relatively older than the children of the elderly from the young old group. The generation gap between the oldest of the old and young old is large. A decade or two ago children were more likely to show respect and care to their parents in old age, treating them as gods, but this situation has changed over time and is reflected in the way the elderly from the young old age group are not getting proper care and respect from their children as they had provided for their parents. More females, widows/widowers (40 per cent and 44 per cent respectively) elderly have reported that they do not get the kind of respect and care from their children as expected compared to males and married elderly respondents. Some times it is found that after the son's marriage it becomes very difficult for parents to adjust with their son's new family. Often elderly men adjust more easily because they do not have as much direct contact with the daughter-in-law as the female household members who are at home most of the day. In the new family setting, the power goes to the daughter-in-law and the son often neglects his parents because he is busy with his new family. The elderly people living alone have reported that they do not receive respect and care from their children as compared to the elderly living with children in joint families.

A large proportion of elderly respondents with a low standard of living and are economically independent feel they do not get care and respect they deserve from their children as compared to those with a high standard of living and dependent. Often if the elderly are living with their children, it means their children are taking care of them as well as showing respect. On the other hand, children of elderly parents with a low standard of living may not be able to keep their parents at home with them, forcing the parents to fend for themselves; in turn they are required to become financially independent. About 60 per cent of elderly respondents feel their children are providing them with as much respect and care as they used to give to their own parents, while the remaining feel they are not respected and taken care of as much as they should be.

Views of Elderly about Son/s

Table 2 displays the elderly respondents' views concerning their son/s, in terms of differences by selected background characteristics. To a question on whether having son/s is beneficial for them in old age, eighty per cent of respondents have reported 'yes', having sons is beneficial for the elderly, whereas, 20 per cent of the elderly have said 'no' i.e., there is no use having son/s if they do not take care of their parents in old age, it is better not to have sons. A large proportion of elderly respondents (82 per cent) in the 'young old' group (60-69) feel

Table 2: Perception of elderly about beneficial of having son/s by selected background characteristics

Background Characteristics	Having Sons are Beneficial for the Elderly		
	Yes	No	Total
Age Group			
60-69	81.6	18.4	365
70-79	78.5	21.5	195
80+	72.5	27.5	40
Sex			
Male	81.3	18.7	315
Female	78.6	21.4	285
Marital Status			
Married	83.5	16.5	352
Widowed/widower	75.0	25.0	248
Type of Family			
Single	62.9	37.1	62
Nuclear	79.5	20.5	263
Joint	84.4	15.6	275
SLI			
Low	71.3	28.7	218
Medium	84.3	15.7	229
High	85.8	14.2	155
Economic Status			
Independent	78.7	21.3	342
Dependent	81.8	18.2	258
Total	80.0	20.0	100.0
	(480)	(120)	(600)

having sons is beneficial for the elderly as compared to 28 per cent of the elderly in the oldest of old age group (80+) who have reported that having sons is not beneficial as compared to 22 per cent of elderly in the 'old old' group 70-79 years of age. As sons are taking care of their own family, they often leave their older parents alone. This transition has happened slowly over time and is an example of the changing social and traditional values and norms in the Indian society. More male and married elderly respondents view that having son/s is beneficial as compared to female and widowed/widower elderly respondents. A large number of elderly respondents living alone and independent with a low standard of living index have reported that having son/s is not beneficial for the elderly as compared to the elderly living in joint families with a high standard of living and economically dependent on their children. The possible reason for the above observation could be that the elderly people who are abandoned by their son/s have to live alone and fend for themselves. Although, they are supposed to be looked after by their sons, giving up working and get assistance from their children. As per the traditional culture, in India son/s are expected to look after their parents in old age, this change in social values has driven the elderly into feeling bitter about being left alone. Furthermore, if the elderly have a low standard of living, their poor financial condition may force them into believing that 'having son/s is not beneficial for the elderly'.

Elderly's Opinion about the Younger Generation

Table 3 presents the perceptions of elderly respondents towards the younger generations in terms of providing care and support to their aged parents. Twenty-eight per cent of elderly respondents have reported that the younger generation takes care of their aged parents. While, 22 per cent have stated that children do not take care of their aged parents and 18 per cent that of elderly said, after marriage, the behaviour of the younger generation changes. Ten per cent of the respondents have stated that the younger generation takes care of their own immediate family and not their aged parents, while the remaining elderly feel the youngsters do not like old persons/parents, and that money is everything for them, old parents are nothing.

Table 3: Opinion of elderly about young generation regarding care and support given to aged parents

Opinion about Young Generation	Percentage	No.
After marriage they changed	18.3	110
Not taking care	21.8	131
They don't like old person	3.0	18
New generation is not taking care	10.8	65
They take cares only their family(wife & children)	10.3	62
Money is everything we are nothing	1.8	11
Taking care	28.2	169
Can't say	2.2	13
Nobody cares	3.5	21
Total	100.0	600

Perceptions of Elderly Respondents towards Younger Generation

The study questions are formed on gaining a better understanding of the elderly's opinion towards the younger generation concerning particular aspects of their life. Some questions are positive and some negative in nature. To understand the perceptions of elderly towards younger generation, a composite score has been computed based on twelve questions after checking the reliability using the alpha value of 0.8531. The composite score has been computed attaching a higher value to positive indicators and lesser values otherwise (i.e. value 2 for agree, 1 for disagree, and 0 can't say). The scores have been categorized into three groups on the basis of cumulative frequency, neutral (below 25 %), positive (25-50 %) and negative (above 50 %).

Distribution of perception scale indicates that 54 per cent of the elderly respondents have a negative perception towards the younger generation; whereas, 28 per cent of the elderly respondents have a positive perception of the younger generation and 18 per cent are found neutral.

The perceptions of elderly respondents towards younger generation as compared by their living arrangements are presented in Table 4. More number of elderly respondents living alone and those living only

with their spouses (73 per cent and 62 per cent respectively) are found to have a negative perception towards younger generation as compared to those living with their children. Whereas, more number of elderly people living with their children and those living with other relatives have reported a positive perception towards the younger generation.

Table 4: Perception of elderly towards young generation by living arrangement

Living Arrangement	Perception towards young generation			Total
	Neutral perception	Positive perception	Negative	
Living alone	6.5	21.0	72.6	62
Only spouse	13.3	24.2	62.5	120
Spouse + unmarried son	15.6	31.2	53.2	109
Spouse + married son	25.7	27.1	47.1	140
With married sons	26.3	30.8	42.9	133
With other relatives	8.3	33.3	58.3	36
Total	18.5	27.8	53.7	100.0
	(111)	(167)	(322)	(600)

Chi-square = 30.384 @ P < 0.001

Eighteen per cent of the elderly respondents have a neutral perception towards younger generations and among those 26 per cent are elderly living with spouses and married sons and 16 per cent are living with spouses and unmarried sons. A higher proportion of elderly living alone and those living with spouses have reported a negative perception towards younger generations as compared to elderly respondents living with their children. This negative attitude is found to increase with elderly parents who either stay alone or with their spouses. Having the company of either married or unmarried children makes the elderly feel more secure and, therefore, are more likely to have a positive attitude towards younger generation.

Table 5 presents the percentage distribution of elderly respondents according to their perception towards the younger generations by the headship of household. More than half of the elderly respondents in the study area have a negative perception about the younger generation, while about 30 per cent have a positive perception. With regard to the headship of the household, those who are not the heads of the households,

about 44 per cent of them have a negative perception about younger generation, whereas those elderly people who are the heads of their households, about 58 per cent of them are found to have a negative perception towards the younger generation.

Table 5: Perception towards younger generation by headship

Household Head	Perception towards Younger Generation			
	Neutral	Positive	Negative	Total
		Perception	Perception	
Non-elderly head	25.1	30.6	44.3	183
Elderly head	15.6	26.6	57.8	417
Household Head				
Non-elderly head	25.1	30.6	44.3	183
Elderly head in one member HH	6.5	21.0	72.6	62
Elderly head in two member HH	11.8	23.6	64.5	110
Elderly head in more than two member HH	19.6	29.4	51.0	245
Total	18.5	27.8	53.7	100.0
	(111)	(167)	(322)	(600)

Chi-square = 24.391 @ P < 0.001

Among the elderly, those who are not the heads of their households, 44 per cent of them have a negative perception towards the younger generation. Whereas those who happen to be the heads of one member households, more than 70 per cent have a negative perception of the younger generation. The corresponding figures for those elderly respondents who are heads of households of two members and households of two or more members are 65 and 51 per cent respectively having a negative perception.

Table 6 shows elderly respondents' differences in perception by background characteristics. Perception among the elderly respondents differs by age; a majority of (70 per cent) the 'oldest of the old' (80+) are found to have a negative perception about the younger generation as compared to the young old age group; this is a worldwide phenomenon in that as people get older, they tend to need more care and support physical as well as emotional. If the elderly feel they are not receiving the needed support, they may blame their children for not taking proper

Table 6: Perception of elderly towards young generation by background characteristics

Background Characteristics	Perception towards Younger Generation			
	Neutral	Positive	Negative	Total
		Perception	Perception	
Age Groups				
60-69	18.4	28.2	53.4	365
70-79	20.5	28.7	50.8	195
80+	10.0	20.0	70.0	40
Sex				
Male	17.5	30.2	52.4	315
Female	19.6	25.3	55.1	285
Education				
Illiterate	18.1	27.0	55.0	382
Primary	16.0	30.6	53.5	144
Middle school & above	25.7	27.0	47.3	74
Caste				
General	18.0	34.0	48.0	50
SC/ST	16.3	25.2	58.5	313
OBC	21.5	30.0	48.5	237
Marital Status				
Married	17.6	28.1	54.3	352
Widowed/widower	19.8	27.4	52.8	248
Type of Family				
Single	6.5	21.0	72.6	62
Nuclear	19.4	31.6	49.0	263
Joint	20.4	25.8	53.8	275
SLI				
Low	8.8	27.3	63.9	216
Medium	21.0	24.9	54.1	229
High	28.4	32.9	38.7	155
Economic Status				
Independent	17.5	28.4	54.1	342
Dependent	19.8	27.1	53.1	258
Total	18.5	27.8	53.7	100.0
	(111)	(167)	(322)	(600)

care of them and thus develop a negative perception towards the younger generation. More number of uneducated female respondents from Scheduled Castes / Scheduled Tribes have reported a negative perception towards younger generations as compared to other groups. Elderly male respondents with education up to primary level from the general category, do have a positive perception concerning the younger generation. It is also found that more elderly people living alone, with a low standard of living and economically independence, are more likely to feel negative about the younger generation as compared to those living with their families with a high standard of living and economic dependence on others.

Multivariate Analysis

Logistic regression shows the effect of background characteristics on the elderly's perception towards the younger generation in Table 7. The dependent variable relates to the perception of the elderly about the younger generation (i.e. 1 = negative perception, 0 = otherwise). After controlling selected predictor variables it is found that age, living arrangements and standard of living index significantly affect the elderly's perception towards the younger generation.

It has been observed that the 'oldest of the old' (80 years and above) people are two times more likely to have a negative perception of the younger generation as compared to 'young old' (60-69 years) people. As age advances, the elderly people develop more vulnerability to illness and their health problems increase, and over time, they need more health care. Now it is common that the elderly's children do not have the time to care for them properly. This lack of care makes the elderly develop a negative perception towards the younger generation as compared to the relatively younger elderly. Living with their children has a significant relationship with the elderly's perception towards the younger generation. Elderly people living with children are less likely to have a negative perception towards the younger generation as compared to those living alone; because those who are living with their children, may receive the expected care and support and hence, their perception towards the younger generation is more likely to be positive. In comparison, those living alone, do not get any kind of help from their children, so their perception is more likely to be negative.

Table 7 : Logistic regression analysis of negative perception of elderly towards younger generation

Variables	Exp (B)
Age Group	
60-69®	
70-79	0.872
80+	2.061**
Sex	
Male®	
Female	1.053
Marital Status	
Married ^(R)	
Widowed/widower	0.896
Caste	
General®	
SC/ST	1.347
OBC	1.049
Type of Family	
Single®	
Nuclear	0.933
Joint	1.642
Living Arrangement	
Living alone®	
Living with spouse	0.909
Living with children	0.471**
Living with other relatives	0.670
SLI	
Low®	
Medium	0.740
High	0.422***
Economic Status	
Independent®	
Dependent on others	1.082
Constant	1.868

*** P < 0.001, ** P < 0.005

Further, those with a high standard of living are also significantly less likely to have a negative perception towards the younger generation as compared to those elderly with a low standard of living. This finding comparing the two socio-economic groups could be true because those elderly people with a high standard of living may not expect as much from their children. When those with a higher standard of living receive care and support from their children, they appreciate it, but are not dependent on it, as compared to those with a low standard of living who are dependent on their children's care for day to day needs.

The expectations from children by the elderly with a lower socio-economic level are greater as they need more care and support. So when this group does not get the needed care and support, it will tend to have a negative perception towards the younger generation. The remaining predictor variables are not significantly related to the elderly's perception towards the younger generation. A respondent's gender, belonging to Scheduled Castes/ Scheduled Tribes, living in joint families and being dependent on others are some of the characteristics more likely to influence a person to develop a negative perception towards the younger generation; however, these associations are not statistically significant.

Being Aged Is a Problem

In old age when the earning capacity declines or when the elderly retire from work, the situation could be overall different, in that their assets (money or property) could be transferred to their children partially or wholly. Thus, being dependent on others for everything can make someone, who is familiar with providing for oneself, feel miserable, and further the elderly may not be able to accept this new development. However, if the elderly do have sufficient income to take care of their own day-to-day needs, the situation may be different. Hence the perceptions of the elderly about ageing as such may differ based on varying life circumstances. Male elderly people during their adult years do not need to ask for anything from others, rather they are commonly the family provider-sole or otherwise. When the role is reversed in old age, they may find it difficult to get used to a new situation. The parents may feel hurt when their own children neglect their needs and requirements. They generally experience psychological and emotional shocks when faced with such situations. Table 8 shows the perceptions

of the elderly who feel that being aged is a problem by selected background characteristics. Fifty eight per cent of the elderly respondents perceive being aged as a problem and the remaining do not perceive it as a problem. More than 59 per cent of the elderly in the 'young old' age group (60-69 years) perceive getting aged as a problem. There is not a significant difference in terms of gender regarding the perception about old age. However, more number of widowed/widower elderly (62 per cent) respondents perceive ageing as a problem as compared to those married elderly people (55 per cent). It is generally argued that

Table 8 : Distribution of elderly by their perception (being aged is a problem) and selected background characteristics

Background Characteristics	Being Aged is a Problem		Total
	Yes	No	
Age Group			
60-69	58.8	41.2	354
70-79	56.3	43.8	192
80+	54.1	45.9	37
Sex			
Male	58.3	41.7	307
Female	56.9	43.1	276
Marital Status			
Married	54.8	45.2	345
Widowed/widower	61.8	38.2	238
Type of Family			
Single	69.5	30.5	59
Nuclear	63.7	36.3	256
Joint	49.3	50.7	268
SLI			
Low	60.1	39.9	208
Medium	55.5	44.5	227
High	57.4	42.6	148
Economic Status			
Independent	59.3	40.7	334
Dependent	55.4	44.6	249
Total	57.6	42.2	100.0
	(336)	(247)	(583)

Note : 17 elderly did not give answer.

as age advances women's health needs get neglected due to their so called lower status and widowhood further their accentuate their unhappiness (Radha Devi *et al.*, 1999).

A large proportion of elderly respondents living alone (70 per cent) perceive ageing as a problem as against to those who live in joint families. Those who living alone do not have anyone to look after them as they are left behind by their children; further, whenever they need help, even during an emergency situation, they have to seek help from others outside their household and this makes them feel lonely and frustrated emotionally and naturally this makes them perceive ageing as a problem.

More number of elderly people with a low standard of living and independent perceive ageing as a problem against those with a high standard of living and dependent on their children. Further, those who are dependent on their children, do receive some emotional and financial support whenever needed unlike those living alone with a low standard of living; they have to work to run their households even when their health does not permit. Hence, for those living all alone, ageing truly does appear to be a problem.

A qualitative analysis of the survey data also reveals that most of the elderly respondents perceive ageing as a problem. There are numerous and varying reasons cited by the elderly for their negative attitude towards the problem of ageing. The most common reasons for perceiving ageing as a problem are: that they can no longer do the work they used to do once; health problems increasing with age; not getting the expected love and respect from children and other family members; and having to be dependent on others for each and every thing. A 65 year old female respondent has expressed her view on this issue, reply in the local Marathi language as follows;

“Don mule asunahi sambhal karu shkat nahi, vegle rahave lagte, kaslach aadhar nahi, ektepan, dukha, nirasha vatate. Samadhani nahi, niradhar yojnechi pan madat nahi. Aata marnachi vat baghat aahe, jagnyachi ichhach geli marun”

(“Even though I have two sons, I am forced to stay alone. They are less bothered about my well being, forget about material, financial and emotional support. I am feeling lonely, hopeless, and sorrowful/

regretful. I also don't get any help from the government. Now I don't want to live anymore, how I prefer to die! Or I am waiting to die”).

Table 9 shows the percentage distribution of elderly respondents who perceive ageing as a problem by the position they hold as the head of the household. About 65 per cent of elderly respondents who do not head their households perceive ageing as a problem as against compared to those who happen to be the heads of their households (about 50 per cent). Among the elderly who are not the heads of the households 65 per cent feel ageing is a problem while 70 per cent of those who are heads of one member households view ageing as a problem. The percentage is considerably less among those who are head in households of two or more than two members (53 per cent for two member households and 52 per cent for households with more than two members). This clearly indicates that headship of the household is an important factor, which influences the perception of the aged about their status and position in the family.

Table 9: Opinion of elderly by their headship

Household Head	Being Aged is a Problem		
	Yes	No	Total
Non-elderly head	64.6	35.4	178
Elderly head	54.6	45.4	405
Household Head			
Non-elderly head	64.6	35.4	178
Elderly head in one member HH	69.5	30.5	59
Elderly head in two member HH	53.2	46.8	109
Elderly head in more than two member HH	51.5	48.5	237
Total	57.6	42.4	100.0
	(336)	(247)	(583)

Chi-square = 11.495 @ P < 0.001

Note : 17 elderly did not answer.

Residence during Old Age

Awareness of old age homes among the elderly is relatively high with 37 per cent. A majority of elderly people (86 per cent) have reported

that the best place for a person to live in old age is with their sons. While the remaining respondents have said that it is with a spouse, alone or with a daughter. Remarkably, five per cent of the elderly respondents have reported that an old age home is the best place for a person to live in old age. A possible reason for this response is that their current living environment is not conducive, rather they would prefer, a more social and family environment.

Responsibility of Elderly Care

The question of who should take care of aged parents becomes critical especially for those who do not have the resources to meet their own expenses. An overwhelming proportion among the elderly (85 per cent) have said that the son/s should take care of the elderly (Table 10). Only six per cent have stated that it is the government's responsibility to help the elderly. Seven per cent of the elderly view they are responsible for their own care and two per cent stated that daughters and other members of the family should take care of elderly parents in old age.

Table 10 : Percentage distribution of elderly according to sex by opinion on responsibilities of care of the elderly

Who should Take Care of the Parents in Old Age	Sex		Total
	Male	Female	
Self	7.4	7.9	7.6
Son's	84.6	84.5	84.6
Daughter	0.7	1.9	1.2
Government	6.4	4.9	5.7
Others	1.0	0.8	0.9
Total	100.0	100.0	564
	(299)	(265)	(100.0)

Note : 36 elderly did not answer.

Are Children Supportive of their Parents in Old Age?

It is a common belief in India that children are the main support for parents in old age which is reflected in the survey when elderly participants reporting 'yes' (83 per cent) and 15 per cent of them 'no' and two per cent. Among the elderly respondents, 21 per cent have said their view about children being the main support has changed over the years.

A 78 year old male respondent has said in Marathi "*Aadhi vataiche ki mule hi matarpanachi kathi hotel/sahara deti, l pan te sarva khote aahe. Te aaplya bapalach noukara sarkhe vagavtat*"

("Initially, I thought my children would take care of me in old age and also give shelter, but I was wrong to think that way. It's shameful to state that, they now treat me like a servant"). He further says,

"Jasjashi disha badalte tase badaltat sarva lok / mula"

("With change in time, there is change in the behaviour of individuals/ children").

When the elderly are asked "How many sons a person should have to support them in their old age?" most report one or two per person. One interesting reply given in Marathi language:

"Mule apekshit aadhar det nahi, tyanchavar avalambun rahaila nako, chagla asel tar ekach pure 4-5 chi aavshakta nahi"

("What's the point in having 4-5 children, when they are not helping? Number doesn't matter much. Even one child who is responsible and helpful is better than many.")

("It is better to have only one child who is helpful and responsible than having many irresponsible sons.")

Best Place to Live in Old Age

A majority of elderly (86 per cent) respondents have reported that the best place for a person to live in old age is with their sons, while the remaining respondents view that it is a spouse, self or daughter; however, remarkably five per cent of the elderly have reported that an old age home could be the best place for a person to live in old age because they feel it is better than tensions and daily quarrels with their children.

Conclusion

The study highlights the need to support elderly, not only in terms of economic support but also morally and emotionally. These result demand for policies to provide care for elderly's health, living arrangements, pension schemes etc. and thus improving their overall status. In the traditional society, the support system was given by the children and relatives. However, over time, this support system has been deteriorating thus there is a need for government to step in and fill this gap and provide support its elderly citizens.

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BOOK REVIEW

WOMEN AGEING by Vineeta Srivastava, published by Rawat Publications, Satyam Apartments, Sector 3, Jawahar Nagar, Jaipur - 302004. Price Rs. 450/-.

Ageing women in India are inevitably exposed to a triple jeopardy—being a woman, being old and facing the high risk of becoming a widow. Vineeta Srivastava’s book, *Women Ageing*, is an attempt to empirically portray how these prejudices impact the woman as she passes through her older years. Largely based on the author’s doctoral dissertation covering 225 women senior citizens of Udaipur in Rajasthan, supports her detailed discussions of various facets of women ageing in India with facts and figures drawn from her investigation.

The first two chapters of the book savour the phenomenon of gender ageing in the Indian scenario, as she tries to fit the process of women ageing into a conceptual and theoretical framework suitable to the design of her study. She reviews a fair number of Indian researches in the field of socio psychological ageing that she considers are relevant to the theme of her study. Her research design employs an exploratory but primarily descriptive structured interview to realize five distinctly stated objectives. Her sample covers the higher, the middle and the lower economic classes drawn from the Girwa area of Udaipur.

Chapter three covers the personal profiles of the sample (age, education, income, marital status etc.), household and family details, sources of income, and the like. Chapter four discusses aspects of health, nutrition and leisure time activities. The health information contains food intake, sensory functioning, state of chronic ailments; availability and accessibility of medical facilities, mobility, and social inter actions, and leisure time engagement of the senior women.

Chapter Five deals with a discussion in some detail, the conflicts and the problems the women faced in their day to day life, the worries that haunt them and their hopes and life expectations. There is also an attempt to identify the parameters of satisfaction among the women.

In the last section the author goes on to dilate on the role of the profession of social work to ameliorate the status of the aged women,

the work of voluntary organizations, curriculum planning in courses of social work, description of various services for the aged (including counseling), day care and residential care services, and some relevant strategies for intervention. At the end, there is a fairly long list of references that are relevant to women ageing.

On the whole, the book can be considered as a good attempt to highlight the multifaceted aspects of women ageing in the Indian context. While the report of the findings of her interviews is a detailed narration of the status of the senior women in her sample belonging to urban Udaipur, the first two chapters on gender and ageing go beyond. She discusses succinctly but comprehensively, the myriad issues that come under gender ageing and the host of factors that impact it, thereby adding substantially to the value of the book. The book can be considered as a useful introduction to women ageing. Also it is a good contribution to the field of Gerontology in India. As such, I recommend the book without any hesitation whatsoever, as a reliable, introductory reading material not only to students and researchers of social work, but to all those who are interested in understanding the nature of women ageing in India and the factors that impact it. All credit, in this regard, goes to the author.

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