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Effect of Age on the Role of High and Low Affinity-Ca^{2+}-Mg^{2+}-ATPase and Mg^{2+}-ATPase in Rat Testicular Function

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ABSTRACT

There has been a growing concern to understand the mechanisms involved in age-associated decline in physiological functions of an organism. Loss of mitochondrial function and ATP production can have a major impact on cellular defenses and repair processes. Role of calcium in different physiological reactions inside the cell including fertility regulation is well established. Membrane bound high affinity Ca^{2+}-Mg^{2+}- ATPase plays an important role in maintaining intracellular Ca^{2+} concentrations and thus maintains the cellular homeostasis. This study presents a developmental and age related changes in the activities of total, high-affinity and low-affinity Ca^{2+}-Mg^{2+}- ATPase as well as Mg^{2+}- ATPase enzymes in testicular mitochondrial membrane of rat to understand their role in differentiation and development of testis during critical stages of maturation.

Key words: Aging, rat testis, mitochondria, total high and low-affinity Ca^{2+}-Mg^{2+}- ATPase, Mg^{2+}- ATPase.

Aging is rega rded as an inevitable biological process, which is characterized by a progressive decline in various physiological functions at the levels of cells, tissues and organs (Nagley and Wei, 1998). An alteration of specific cellular molecules such as DNA, RNA, protein, enzymes and lipids etc. takes place with advancing age (Saul *et. al.*,

1987). In human and rodents, male reproductive aging is characterized by testicular dysfunction. Aging of the mammalian testis is accompanied by a decrease in the testosterone production and atrophy of the seminiferous tubules due to loss of spermatogenic cells (Syntin *et al.*, 2001). It is reported that mitochondria plays a key role in aging process and its function is impaired with aging (Miquel, 1980; Shigenaga *et al.*, 1994). Temporary or sustained loss of mitochondrial function and ATP production can have a major impact on cellular defenses and repair processes.

ATPase (EC3.6.1.3) is a class of enzymes that catalyzes hydrolysis of ATP to yield ADP and inorganic phosphate with release of free energy. ATPases are integral part of the cell membrane and are responsible for ion transport through cell membrane (Lehninger *et al.*, 1993). Therefore any change in their activities will reflect the change in functional status of the cell membrane.

Role of calcium ions in regulating various cellular functions in different tissues including that of testis is well established. The ATPases play a vital role in regulation of sperm motility through the maintenance of intracellular Ca^{2+} concentrations (Breibart *et al.*, 1985). ATP hydrolysis by Ca^{2+} - Mg^{2+}- ATPase is biphasic in nature with high and low affinity components (Richards *et al.*, 1978; Steiger and Luterbacher, 1981). A high affinity Ca^{2+} stimulated Mg^{2+} dependent ATPase has been reported to be associated with the plasma membrane fractions of a number of animal tissues (Itana and Penniston, 1980; Pershad Singh and McDonald, 1980; Verma and Penniston, 1981; Tsukamoto *et al.*, 1986; Brunett *et al*. 1990; Teo *et.al*., 1988; Kodavanti *et al.*, 1990). A common feature of high affinity Ca^{2+}-Mg^{2+}- ATPase is that the enzyme gets stimulated by submicromolar concentration of free Ca^{2+} and is dependent on low concentration of endogenous Mg^{2+} (Teo *et al*. 1988). The microsomal membrane isolated from rat testis has been found to contain a Mg^{2+} dependent and a Mg^{2+} independent- Ca^{2+}-ATPase (Mazumdar *et al*., 1991). However no report relating to mitochondrial high and low affinity Ca^{2+}-Mg^{2+}-ATPase, total Ca^{2+}-Mg^{2+}-ATPase and Mg^{2+}-ATPase and their role in testicular functions during aging is available till date

Testis of the rat undergoes marked intensive changes from birth to maturity. The Leydig cells decrease in number during the first two

weeks after birth and then the adult type appears and increases in number until five weeks of age (Lording and deKrester, 1972). Sertoli cell division ceases at the age of 16-19 days (Clermont and Perey, 1957). Spermatogenesis starts at about 6 days of age, secondary spermatocytes undergo meiosis by the age of 24 days and mature spermatozoa appear in the lumen of the seminiferous tubule by the age of 45 days (Clausen *et al*., 1979). Keeping in view the information available, the specific aim of the present investigation is to study developmental and age related changes in activities of total Ca^{2+}-Mg^{2+}-ATPase, high and low affinity Ca^{2+}-Mg^{2+}-ATPase and Mg^{2+}-ATPase in mitochondrial fraction of rat testis and their role in functional status of the testis with advancing age.

Materials and Methods

Animals

Male Wistar rats (7, 15, 21, 30, 45, 60, 90, 105, 120 and 600 days old) born and reared in the laboratory were used for the study. Weanlings (up to 21 days) were kept with their mother and after completion of weaning, rats were fed with a balanced diet as described earlier (Samanta and Chainy, 1997) with free access to tap water and were kept under controlled 12 hr light and 12 hr dark cycles.

Preparation of testicular mitochondrial fraction

The fractionation was done according to the method described earlier (Roy and Chainy, 1996). In brief, a 10% (w/v) homogenate of decapsulated testis was prepared in ice cold homogenizing buffer (Tris HCL, 50 mM; sucrose 0.32 M; pH 7.5) with the help of a glass teflon motor driven homogenizer. The homogenate was centrifuged at 14000x g for 10 min to get the mitochondrial fraction. The mitochondrial pellet was washed twice and finally suspended in homogenizing buffer (200 mg tissue/ml).

Assay of Total, high-affinity and low-affinity Ca^{2+}-Mg^{2+}- ATPase

The assays of total Ca^{2+}-Mg^{2+}- ATPase and high-affinity Ca^{2+}-Mg^{2+}- ATPase were carried out in an assay mixture of 1 ml containing 50 mM Tris-HCL buffer (pH 7.5), 3 mM ATP (disodium salt), 50-70 µg of mitochondrial protein, 0.5 mM EGTA plus an amount of $CaCl_2$ was added to obtain desired free Ca^{2+} concentration i.e. 0.49 mM $CaCl_2$

(free Ca^{2+} conc. 677nM) for high-affinity Ca^{2+}-Mg^{2+}-ATPase and 1.5 mM $CaCl_2$ (free Ca^{2+} conc. 1x10^{3}mM) for total Ca^{2+}-Mg^{2+}-ATPase. Free Ca^{2+} values were calculated according to Pershad Singh and McDonald (1980). Reaction mixture was pre-incubated for 10 min at 37ÚC in a water bath and the reaction was initiated by the addition of disodium salt of ATP. After incubation for 30 min at 37ÚC, 0.1 ml 50% trichloroacetic acid (w/v) was added to the reaction mixture in order to terminate the reaction. The assay mixture was subjected to centrifugation at 5000 rpm for 10 min and the liberated inorganic phosphate in the supernatant was measured spectrophotometrically by the method of Chen et al., (1956). The high-affinity Ca^{2+}-Mg^{2+}-ATPase activity in the standard assay was calculated as the difference in the rate of ATP hydrolysis in assay buffer containing 0.5 mM EGTA with no added Ca^{2+} and in 0.49 mM Ca^{2+} -EGTA buffer containing 677 nM of free Ca^{2+}. When ATPase activity was measured in the presence of high concentration (1x10^3 mM) of free Ca^{2+}. The total ATPase activity was assumed to be the sum of the activities of the high-affinity Ca^{2+}-Mg^{2+}-ATPase plus the low-affinity Ca^{2+}-Mg^{2+}-ATPase. Thus the low-affinity Ca^{2+}-Mg^{2+}-ATPase was determined by subtracting high-affinity Ca^{2+}-Mg^{2+}-ATPase activity from total Ca^{2+}-Mg^{2+}-ATPase activity.

Assay of Mg^{2+}-ATPase

Assay of Mg^{2+}-ATPase was carried out in 1.0 ml assay mixture containing 50 mM Tris-HCl buffer (pH 7.5), 0.5 mM EGTA, 5mM $MgCl_2$, 3 mM ATP and 50-70 ìg of protein. The rest of the procedure was same as mentioned above.

Statistical Analysis

All data were subjected to one way analysis of variance (ANOVA) followed by Duncan's new multiple range test to find out the level of significance among mean values. A difference was considered significant at $P < 0.05$ levels.

Result and Discussion

Apart from its role as a structural element, intracellular Ca^{2+} content is known to play a critical role in regulating multiplicity of metabolic reactions (Carafoli and Crompton, 1978). Therefore, the maintenance of free Ca2+ concentration inside the cell is essential for proper functioning of the cell (Carafoli and Zurini, 1982).

The maintenance of intracellular calcium at a concentration much lower (with a range of approximately 0.1 µM) than that of the extra cellular medium (i.e. approximately 1.5 mM) depends on calcium extrusion through the plasma membrane. Also intracellular organelles play a vital role in the regulation of calcium concentration inside the cell by acting as a storehouse. They either release calcium or pull in calcium from the cytoplasm depending upon the physiological need. Out of two mechanisms which have been implicated in the process of calcium efflux, membrane bound high-affinity Ca^{2+}-Mg^{2+}-ATPase is an energy dependent mechanism whereas the other one is Na^{+}-Ca^{2+} exchange system (Lotersztajn *et al*., 1981).

The present study reveals that mitochondrial fraction of rat testis has two types of Ca^{2+}-Mg^{2+}-ATPase: a high affinity form which needs calcium concentration in submicromolar range i.e. less than 1.0 µM and a low affinity form which needs calcium concentration in the millimolar range. Therefore, calcium stimulated ATPase from testis mitochondrial membrane was assayed in absence of magnesium. Since it is not possible to assay the enzyme activity by excluding endogenous Mg^{2+} present in mitochondrial fraction, the enzyme is called as Ca^{2+}-Mg^{2+}-ATPase. It is assumed that magnesium present in the mitochondrial fraction is sufficient to satisfy magnesium requirement for the activity of the enzyme at low and high calcium concentrations. Therefore, the enzyme activity estimated at 677 nM of calcium is designated as high-affinity Ca^{2+}-Mg^{2+}-ATPase and the result is in good agreement with the results observed in plasma membrane of different rat tissues such as skeletal muscle (Sulakhe *et al*., 1973); brain (Soube *et al*., 1979; Itana and Penniston, 1980), adipocytes (Persad singh and McDonald, 1980), corpus luteum (Verma and Penniston, 1981); liver (Lotersztajn *et. al*., 1981); kidney proximal and distal tubules (Tsukamoto *et al*., 1986, Brunette *et al*.,1987; 1990); parotid cell (Teo *et al*., 1988) and heart sarcoplasmic reticulam (Kodavanti *et al*., 1990).

Differentiation, development and reproductive maturity are the three important phases in the life of an organism, which may depend on the appearance or disappearance, or alteration in the levels of specific enzymes or their isoenzymes (Kanungo, 1980). Participation of one such enzyme i.e. Ca^{2+}-ATPase has been implicated in the mediation of many physiological events, which occur during reproductive process

(Abla *et al*., 1974; Ashraf *et al*., 1984; Roldan and Fleming, 1989). Magnesium dependent and independent Ca^{2+}-ATPases have been identified and characterized in the microsomal fraction of rat testis (NagDas *et al*., 1988; Mazumdar *et al*., 1991). The authors suggested that magnesium-independent Ca^{2+}-ATPases might play a vital role in calcium transport across the testicular membrane.

In the present investigation, high-affinity Ca^{2+}-Mg^{2+}-ATPase of mitochondrial membrane in rat testis increased gradually till 15 days of age and remained high till 21 days of age (Fig. 1). These three weeks correspond to the appearance and differentiation of spermatogonia and spermatocytes (Clermont and Perey, 1957). After 3rd week of life, a decline in the enzyme activity was observed and subsequently attaining a stable lower value at 45 days of age. This corresponds to the appearance and further differentiation of spermatids and spermatozoa at 45 days of age. During the first three weeks of life, active proliferation of germinal epithelium takes place. Increased level of high-affinity Ca^{2+}-Mg^{2+}-ATPase during this period may be attributed to its specific role in

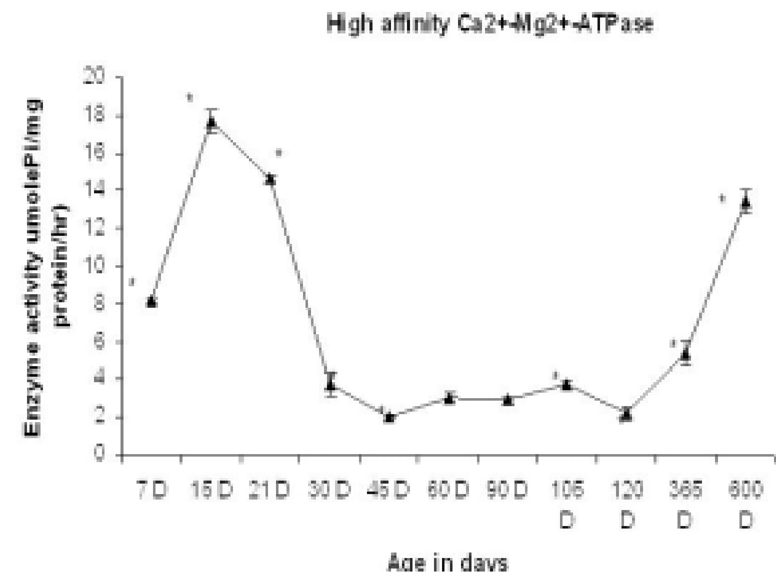

Fig 1. Age related changes in mitochondrial high-affinity Ca^{2+}-Mg^{2+}-ATPase activity in testis of rat. Enzyme activity is expressed as mmole Pi/mg protein/hr. Data are represented as mean ± s.d. of four animals. * Statistically significant (P<0.05) as compared to 90 days old age groups.

proliferation of germinal epithelium. The requirement of high energy in this process is supported by the fact that mitochondrial fraction of testis in 25- day old rat metabolized ATP at a faster rate and to more complete extent than the mitochondria from the liver and kidney (Hollinger, 1971). Dalterio *et al*. (988) reported the presence of a high-affinity Ca^{2+}-ATPase in the purified testicular plasma membrane of mice, which exhibited elevated level from weaning age to adulthood. Further they observed that a positive correlation exists between developmental pattern of Ca^{2+}-ATPase and testicular steroidogenic activity during sexual maturation.

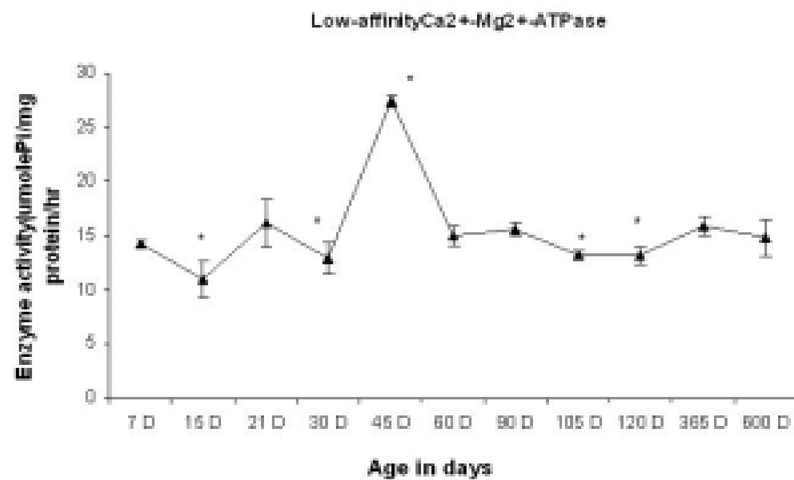

Fig 2. Age related changes in mitochondrial low-affinity Ca^{2+}-Mg^{2+}-ATPase activity in testis of rat. Enzyme activity is expressed as mmole Pi/mg protein/hr. Data are represented as mean ± s.d. of four animals. * Statistically significant ($P<0.05$) as compared to 90 days old age groups.

A higher activity of total Ca^{2+}-Mg^{2+}-ATPase during first three weeks (Fig. 3) is in good agreement with Delhumu-Ongay *et al*. (1973), who demonstrated the presence of high level of total Ca^{2+}-Mg^{2+}-ATPase in crude homogenate of the testis in rat during sexual maturation. A peak in total and low-affinity Ca^{2+}-Mg^{2+}-ATPase (Fig. 3 and 2 respectively) in the rat testicular mitochondrial fraction was observed at 45 days of age, which corresponds to the appearance of spermatozoa in the lumen of seminiferous tubules.

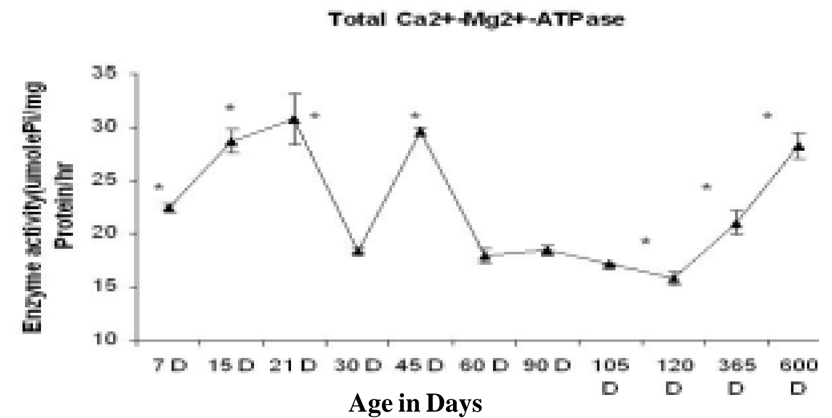

Fig 3. Age related changes in mitochondrial total Ca^{2+}-Mg^{2+}-ATPase activity in testis of rat. Enzyme activity is expressed as mmole Pi/mg protein/hr. Data are represented as mean ± s.d. of four animals. * Statistically significant ($P<0.05$) as compared to 90 days old age groups.

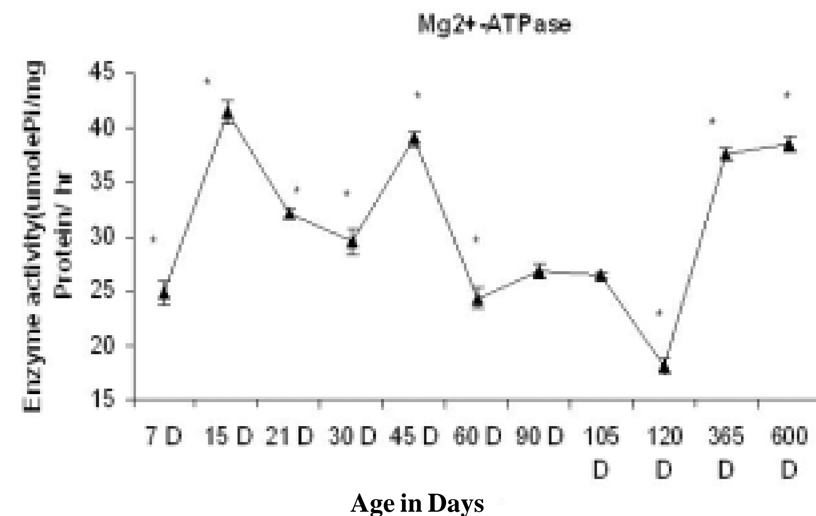

Fig 4. Age related changes in mitochondrial Mg^{2+}-ATPase activity in testis of rat. Enzyme activity is expressed as mmole Pi/mg protein/hr. Data are represented as mean ± s.d. of four animals. * Statistically significant ($P<0.05$) as compared to 90 days old age groups.

During sexual maturation, Mg^{2+}-ATPase activity exhibited two peaks, one at 15 days of age and the other at 45 days of age (Fig.4). The first peak in the enzyme activity corresponds to the proliferation of germinal epithelium and differentiation of spermatogonia and spermatocytes. The second peak in the enzyme activity corresponds to the appearance of spermatozoa in the lumen of the seminiferous tubules. Since these events are high energy requiring process, the observations in the present study suggests that Mg^{2+}-ATPase plays a significant role in differentiation and maturation of germ cells in testis.

Activities of enzymes i.e. total, high-affinity Ca^{2+}-Mg^{2+}-ATPase and Mg^{2+}-ATPase increased during old age. Although the physiological significance of this event is not clear, but it is possible that the increase in the enzyme levels of the older age groups could be related to loss or regression of germinal epithelium and disposal of degenerating cells, which are phagocytosed by the Sertoli cells (Clegg, 1963). Phagocytosis is also reported to be an energy requiring process (Selvaraj and Sbarra, 1966).

Conclusion

Results of the present investigation revealed that there are considerable variations in mitochondrial ATPase system of the testis of rat during maturation and aging process. The significance of the maturation and aging profiles of mitochondrial ATPase enzymes remained to be elucidated but the high level of total and high-affinity Ca^{2+}-Mg^{2+}-ATPase activity at an early stage of development may contribute to differentiation and maturation of germ cells in testis, which is considered to be a high energy demanding process.

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Elder Homicide : A 10-Year Retrospective Study from South Delhi

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ABSTRACT

Sixty six autopsy cases of elder homicide received from South Delhi were studied during the 10-year period from Jan 1996 to Dec 2005 at the All India Institute of Medical Sciences, New Delhi. Cases included those with victims more than 60 years of age. Data was analyzed with regard to the age and sex of the victim, cause of death, location of death, motive, perpetrator and sexual assault component. There were 38 male (57.6%) and 28 female (42.4%) victims. The age range of the homicide victim was 60 to 85 years with 3 victims of the age of 80 years or older. Blunt force trauma to head, thorax and abdomen was the most common cause of death (n=17, 26%) followed by mechanical asphyxia (n=16, 24%), stab injuries (n=16, 24%) and firearms (n=11, 17%).

Key words : Elder, Perpetrator, Acquaintance, Blunt force, Firearm

Aging is an inevitable biological phenomenon. Advances in medical sciences and the improved social conditions during the past few decades have increased the life span of human beings of both the sexes. As a result, there is a substantial increase in the population of elderly persons. Older people today are more visible, active, and independent than ever before. Apart from various inevitable medical problems related with

old age, there are associated psychosocial problems too. Physical weakness, social isolation, lack of care from children, and dependency on hired domestic help has made them more vulnerable to violent crimes for their material possessions.

In the present article, authors have attempted to study the incidences and patterns of homicidal death of elderly persons brought to AIIMS, New Delhi; the largest tertiary care hospital in the capital city of India.

Material and Methods

The All India Institute of Medical Sciences is the hospital where the medico legal autopsies of South Delhi, India, are conducted. We examined all cases of elder homicide (Age of victims being 60 years or more) over a 10 year period, 1996-2005. Sixty six cases of elder homicide amounting to about 0.5% of all autopsied cases were received in the mortuary of the All India Institute of Medical Sciences during the same period. The detailed analysis of these cases was based on the medical records and the evaluation of autopsy reports.

Results

The majority of the victims were male (n=38, 57.6%) as compared to female (n=28, 42.4%), (Fig. 1) and the commonest age group involved was 60-65 years (n=26, 39.4%) followed by 66-70 years (n=16, 24.2%), 71-75 years (n=15, 22.7%) and 76-80 years (n=7, 10.6%). Two cases of more than 80 years of age were also reported in the study. (Fig. 2).

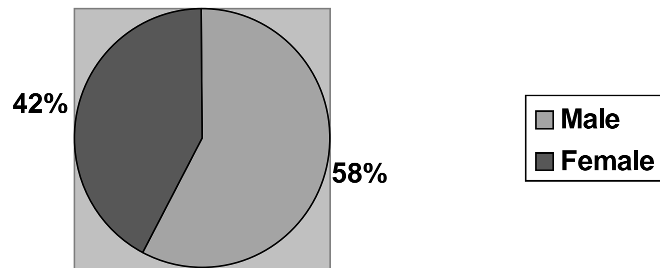

Figure 1. Sex wise distribution

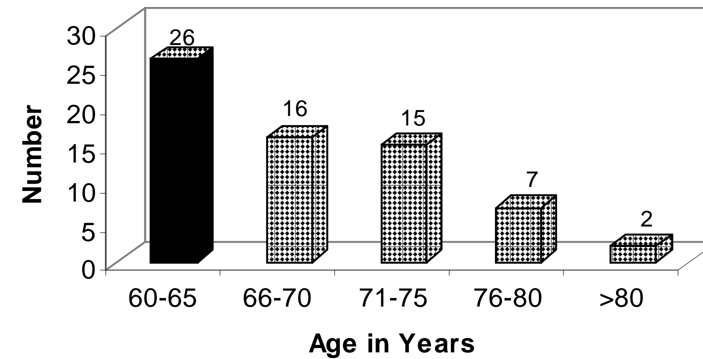

Figure 2. Age wise distribution

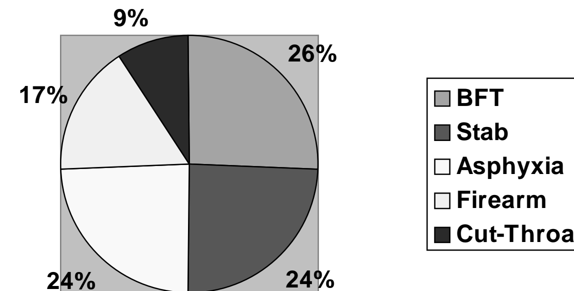

Figure 3. Cause of death

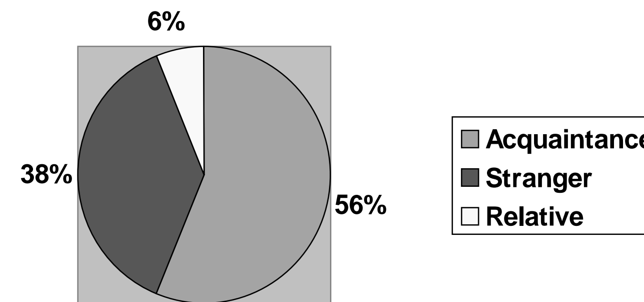

Figure 4. Perpetrator-Victim relationship

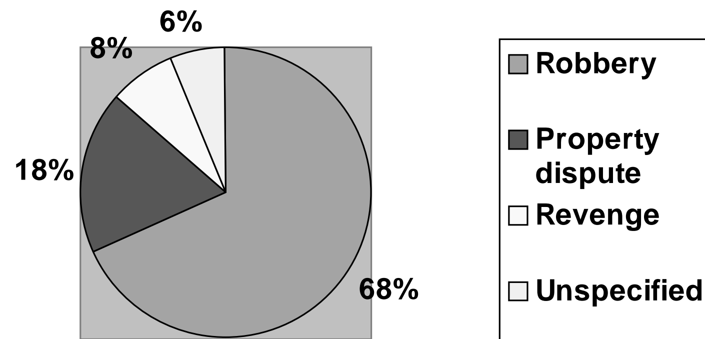

Figure 5. Homicide Scenario

Out of 66 cases, seven cases of couple murder were also reported. Blunt force trauma was the leading cause (n=17, 26%) of homicidal deaths in elderly followed by stab injury (n=16, 24%), asphyxial deaths (n=16, 24%) firearm injuries (n=11, 17%) and cut-throat (n=6, 9%) (Fig.3) The location of the incident was also examined. The majority of deaths (n=62, 93.9%) occurred at the decedent's residence, while 5 homicides occurred in parks. The perpetrators were categorized as acquaintances of the decedents (n=37, 56%), strangers (n=25, 37.9%) and relatives of the decedent (n=4, 6.1%). (Fig.4) Apparent motives and scenarios were analysed. The most common motive was robbery (n= 45, 68.2%), followed by property dispute/ taking over of property owned by elderly by land mafia (n=12, 18.2%) and revenge (n=5, 7.8%). The motive was not specified or known in 4 cases of homicides. (Fig. 5) None of the victims showed evidence of sexual assault.

Discussion

With constant improvement in the socioeconomic conditions, people of most of the developed and developing countries are living longer. Most elderly individuals lead productive lives within the community. Unfortunately, when elderly individuals suffer from a debilitating disease or injury, society seems ill-equipped to care for them. The frailty and social isolation that comes with illness or advanced age renders the elderly more vulnerable to crime. Although most elders will die of natural disease, however violent assaults account for up to 14% of elder trauma

patients and result in death more frequently than in younger patients. (Schwab *et al.,*2000). In our study the majority of the victims were male (n=38, 57.6%) as compared to female (n=28, 42.4%), possibly due to more frequent physical confrontations among men. Similar finding have been observed by Fischer *et al.* (1994) and Collins and Presnell (2006). The incidence of these homicides sharply decreased with age (Schmidt *et al.,* 1999). Our study found elder victim in the range of 60-85 years, with maximum incidence in 60-65 years (n=26,39.4%) followed by 66-70 years (n=16, 24.2%), 71-75 years (n=15, 22.7%) and 76-80 years (n=7, 10.6%). Only two cases above the age of 80 years were noted in the study. Blunt force trauma was the leading cause (n=17, 26%) of deaths followed by stab injury (n=16, 24%), asphyxial deaths (n=16, 24%) firearm injuries (n=11, 17%) and cut-throat (n=6, 9%). These findings reflect the importance of the direct physical assault. Similar findings were recorded by Fischer *et al.*(1994) in their study and Schmidt *et al.* (1999). Collins and Presnell (2006) and Falzon and Davis (1998) in their study of elder homicide in United States of America had found firearm injuries, the most common cause of death. This prevalence is true of all homicides in United States regardless of the victim's age because of easy availability of firearm license in USA. (Drawdy and Myers). Although elders consider their home the most secure place, this is where a large majority of such incidents occurred. In the present study the common location for homicide being victim's own residence (n=62, 93.9%), which is consistent with the studies carried out by Schmidt *et al.* (1999) and Collins *et al.* (2006). Falzon and Davis (1998). Out of five cases of homicide that occurred outside the home of victims, four cases were of revenge killing by the perpetrator known to the victim. The most common motive in our study was robbery, followed by property dispute/ taking over of property owned by elderly by land mafia. Cognitive impairment, physical disabilities, frailty and social isolation renders the elderly more vulnerable. Similar findings have also been reported by Collins *et al.* (2006), Dankwarth and Puschel (1991). The perpetrators were usually known to the victims in slightly over 40% of the cases. (acquaintances of the decedents 56%, and relatives of the decedents 6.1%). In most of the cases the domestic help employed by elderly were the perpetrators of the crime for their material possessions. These findings are consistent with the studies carried out by Collins *et al.*(2006), Schmidt *et al.* (1999) and Ahlf (1994).

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Health of the Urban Elderly in Ludhiana, Punjab

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ABSTRACT

The paper aims to find out the magnitude and pattern of health problems amongst the elderly, with the view to find out remedial measures for improving their health.137 persons of 60+ age were randomly selected and were interviewed and examined clinically. Information was obtained on a pre-tested questionnaire. The data was analyzed on Epi-Info v-6 software. Proportions were compared and Chi-square test applied. It was found that 52.6 % men and 66.3 % women respondents were in the young-elderly age-group of 60-69 years. More women (33.7 %) than men (25.0 %) were living alone. Illiteracy was significantly higher in women (53.9 %) than in men (32.9 %). Financial dependence was also significantly more in the elderly women (82.0 %) than in men (68.4 %). The elderly suffered most (83.6 %) from ophthalmic problems. 40.0 % had hypertension and 21.9 % had diabetes mellitus. While one-fifth of the respondents suffered from depression, the women were three times more prone to it than the men. It was concluded that the physical and emotional health needs and financial dependency of the elderly require a multifaceted approach providing for their overall well-being.

Key words: Elderly, Health, Geriatrics

An universally applicable definition of what constitutes old age is elusive. In many developing countries, old age is seen to begin at the point when active contribution is no longer possible (Gorman & Heslop, 2002). It is often erroneously assumed that older individuals become

senile and lose their ability to function physically and intellectually. Although some individuals may develop illness or become compromised physically and mentally, it is possible for older persons to maintain a high degree of physical and intellectual activity into their very late years (Roos & Havens 1991).

However, the inescapable fact remains that wherever there is functional decline and debility, the quality of life does get compromised. Economic dependence and social restriction further add to the gravity of the situation. Being cut off from the professional, occupational, social neighborhood, environment and even from the busy near and dear ones may serve as the proverbial last straw. Years wrinkle the skin, but worry, doubt, fear, anxiety and self-distrust wrinkle the soul (Park K, 2005).

An ICMR survey conducted in 1984-85 of elderly persons (60 + yrs) attending geriatric clinics in rural areas reported maximum visual complaints (88%) followed by locomotive disorders (40%) (VHAI 1997). A study of the health conditions of the elderly in rural South India (Chacko and Joseph, 1990) reported that the major causes of illness were chronic bronchitis, anemia, hypertension and corneal opacity. Another study (Purohit and Sharma, 1976) reported that enteritis, fever, skin diseases, asthma and rheumatism were the main causes of illness amongst them.

Aims and Objectives

To study the magnitude and pattern of health problems amongst the elderly, with the view to find out remedial measures for improving their health.

Method

Setting : The geriatric population in a field practice area of an Urban Health Centre of the Department of Community Medicine, Christian Medical College, Ludhiana. The study was conducted during the period June 2006 to August 2006.

Sampling : The field practice area covered a population 8554 as on 01.01.2006. The number of people aged 60 years or more, 7.7 per cent as per 2001 census (Park K, 2005) was estimated to be 682. A 20 per cent sample of the eligible population (i.e., 137) was taken for this

study by systematic random sampling of houses, through home visits. The actual number of respondents studied was 165, since some homes had more than one elderly in which case all the elderly in the home were included in the study.

Each respondent was interviewed and clinically examined in his/ her own house. Modified Prasad's classification (Kumar P., 1993) was used to assess socio-economic status. An average of three readings was taken to measure blood pressure, and the subjects were graded as per WHO criteria (WHO, 1996). Geriatric Depression Scale (GDS) (Brink *et al.*, 1982) was used to assess depression. Obesity was classified on the basis of the Body Mass Index (BMI) (Park K, 2005). The data was analyzed using Epi-Info software (Dean *et al.*, 1994).

Results

Table-1 : None of the study population had age 90+ years, so the group has been omitted. Women elderly (53.9 %) outnumbered the men (46.1 %). Most of the respondents (60.0%) were in the age group 60-69 years. 29.7 % of the elderly had lost their spouse and were living alone. More women (33.7 %) than men (25.0 %) were living alone.

75.8 per cent of the elderly had no independent source of income and were financially dependent upon their children/relatives for their survival and upkeep. More women (82.0 %) than men (68.4 %) were financially dependent, and the differences were statistically significant. 42.2 per cent of the elderly were illiterate. More women (53.9%) than men (32.9%) were illiterate, and the differences were statistically very significant.

Table-2 : Ophthalmic problems were the most commonly reported morbidity (83.6%), followed by musculoskeletal disorders (63.6%).

Table-3 : Nearly half the elderly examined (49.1%) were overweight. 40 per cent of the elderly were hypertensive of which more than half (51.5%) were overweight. Diabetes mellitus was reported in 21.9 per cent of the respondents of which 55.6 per cent, 41.7 per cent and 2.8 per cent were normal, overweight and underweight respectively. However, no statistically significant association was found between obesity and hypertension/diabetes.

Table 1 : Socio-demographic profile of the elderly

Age group (Years)	Male		Female		Total	
	No.	%	No.	%	No.	%
60-69	40	52.6	59	66.3	99	60.0
70-79	27	35.5	25	28.1	52	31.5
80-89	09	11.8	05	5.6	14	08.5
Total	76	100(46.1)	89	100(53.9)	165	100(100)

X^2=3.87, df = 2, p = 0.14

Marital status	Male		Female		Total	
	No.	%	No.	%	No.	%
Living with Spouse	57	75.0	59	66.3	116	70.3
Living alone	19	25.0	30	33.7	49	29.7
Total	76	100(46.1)	89	100(53.9)	165	100(100)

X^2=1.49, d.f.=1, p = 0.22

Financial Security	Male		Female		Total	
	No.	%	No.	%	No.	%
Own income	24	31.6	16	18.0	40	24.2
Dependent	52	68.4	73	82.0	125	75.8
Total	76	100(46.1)	89	100(53.9)	165	100(100)

X^2=4.13, d.f.=1, p = 0.04

Educational status	Male		Female		Total	
	No.	%	No.	%	No.	%
Illiterate	25	32.9	48	53.9	73	44.2
Primary	22	28.9	20	22.5	42	25.5
=/> Matric	29	38.2	21	23.6	50	30.3
Total	76	100(46.1)	89	100(53.9)	165	100(100)

X^2=7.64, d.f.=2, p = 0.02

Table 2 : Morbidity Profile of the elderly

Morbidity	Females (n=89)		Males (n=76)		Total (n=165)	
	No.	%	No.	%	No.	%
Eye	79	88.8	59	77.6	138	3.6
Respiratory	18	20.2	21	27.6	39	3.6
Heart	37	41.6	33	43.4	70	2.4
Musculoskeletal	68	76.4	37	48.7	105	3.6
Nervous System	43	48.3	32	42.1	75	5.5
GIT	36	40.4	33	43.4	69	1.8
ENT	32	36.0	26	34.2	58	5.2

(Note : The totals are more than the no. of respondents, because of multiple morbidities)

Tables 3: Relationship of Obesity with hypertension/diabetes in the elderly

Hyper-tension	Normal (BMI 18.5–24.99)		Underweight (BMI =/>25)		Over-weight (BMI < 18.5)		Total (n = 165)	
	No.	%	No.	%	No.	%	No.	%
Yes	31	47.0	01	1.5	34	51.5	66	40.0
No	47	47.5	05	5.1	47	47.5	99	60.0
Total	78	47.3	06	3.6	81	49.1	165	
100.0								

X^2 = 1.49, d.f. = 2, p = 0.47

Diabetes mellitus	Normal (BMI<18.5-24.99)		Underweight (BMI < 18.5)		Over-weight (BMI =/>25)		Total (n = 165)	
Yes	20	55.6	01	2.8	15	41.7	36	21.9
No	58	45.0	05	3.9	66	51.1	129	78.1
Total	78	47.3	06	3.6	81	49.1	165	100.0

X^2 = 1.28, d.f. = 2, p = 0.53

Table-4: More than one-fifth (21.2 %) of the elderly suffered from depression, with the possibility of depression existing in another 31.5 per cent. Hence, approximately half (52.7 %) respondents showed evidence of depression. The women suffered more, with 30.3 per cent showing score of severe depression as compared to 10.5 per cent in males, and this was statistically highly significant.

Table 4 : Geriatric Depression Score

Score	Female		Male		Total	
	No.	%	No.	%	No.	%
<=5 (No depression)	35	39.3	43	56.6	78	47.3
>5 and <=10 (Suggestive of depression)	27	30.3	25	32.9	52	31.5
>10 (Depression)	27	30.3	8	10.5	35	21.2
Total	89		76		165	100

$X^2 = 10.25$, df = 2, p-value = 0.006.

Discussion

Age-group 60-69 years (60.0%) constituted the major fraction of the elderly followed by 70-79 years (31.5%) and above 80 years (8.5%) of age which is almost similar to a study in Varanasi (Ravishanker, 2000), reporting 68.3% , 23.3% and 8.3% respectively, and 63.5% , 29.5% and 7.0% respectively in rural Tamil Nadu (Elango S, 1998). The women (53.9%) outnumbered the men (46.1%), which is similar to the proportions (52.8% and 47.2%, respectively) found in Meerut (Goel PK *et al.,* 2003), and 52.3 per cent and 47.7 per cent respectively in south India (Chacko & Joseph, 1990). 75 per cent of the elderly men and 65.2 per cent of the elderly women were living with their spouses. This is comparable to the NSS data (NSSO, 1998), which also reported 75 per cent of the elderly men to be living with their spouse. Financial dependence was found in 75 per cent of elderly as compared to 58.5 percent reported by Goyal P.K. *et al.* (2003), and 66 per cent reported by Elango S (1998). 44.2 per cent of the elderly in the present study

are illiterate as against 63.0% elderly in India being illiterate as per NSS data (NSSO, 1998). Hence, illiteracy amongst the elderly in the studied population is much less as compared to the national level.

The morbidity profile of the study population (Table-2) revealed preponderance of ophthalmic problems (83.6%), followed by musculo-skeletal (63.6 per cent) disorders. Amongst those who had ophthalmic problems, 75.8 per cent had refractive error and 38.8% had cataract. Prakash, Choudhary & Singh (2004) reported a prevalence of ophthalmic problems of 70% with cataract (44%) and refractory error (24.71%). The present study is similar to that of Purohit and Sharma (1976), in which cataract was reported in 40 percent of the elderly. Diseases of the respiratory system were found in 23.6 per cent of the elderly as compared to 36 percent reported by Prakash, Choudhary & Singh (2004). Cardiac problems were found in 42.4% of elderly, of which 40.0% had hypertension. This is in accordance with WHO (1989) which states that in both young and older adults, blood pressure increases with age because of stress and tension. Amongst musculo-skeletal problems (63.6%), joint pains (54.5%) were commonly reported followed by backache (27.3%). As observed by Moris M Aner (2004), amongst musculo-skeletal problems pain remains one of the most common untreated conditions in elderly patients of which pain of spinal origin (back pain) constitutes the single largest group of pain complaints in the elderly population. 35.2 per cent of the study population had E.N.T problems, of which loss of hearing was observed in 40.0%.

Of all gastrointestinal tract disorders, constipation (24.2%) was most commonly reported. Other studies (The Merck Manual of Geriatrics, 2000) have reported similar findings, where the over all prevalence of self–reported constipation was 24-37 per cent with women reporting more constipation than men. Age-related changes in ano-rectal physiology that predispose the elderly to constipation include increased rectal compliance and impaired rectal sensation, so that larger rectal volumes are needed to elicit the desire to defecate.

49.1 per cent of the elderly were overweight. More women (49.4%) than men (48.7%) were obese. Swami HM *et al.* (2005), in an epidemiological study of obesity among elderly in Chandigarh, recorded a high prevalence of overweight/obesity (33.15%), more in women than in men. Central obesity in the elderly population of India is a major

public health problem. Obesity is associated with significant increase in morbidity and mortality. A body mass index (BMI) of 26 or more is a significant risk factor for diabetes and BMI > 30 is significantly associated with arthritis and hypertension (WHO, 2000).

Depression appeared to be a common condition. Approximately half (52.7 %) of the respondents in the present study showed signs of depression, of which severe depression was observed in 21.2 per cent. The women were more prone to depression, with 30.3 per cent showing score of severe depression as compared to 10.5 per cent in males, and this was found to be statistically very significant. Other studies (Lavretsky H, 2002; Prakash, Choudhary & Singh, 2004) also corroborate greater prevalence of depression in women compared to men.

Conclusions and Recommendations

As India marches into the next millennium, ageing will be one of the crucial issues vying for attention. Society in general, legislators, health care providers and individuals must plan so that those entering their senior years will have something positive, secure and fulfilling to anticipate. Adoption of healthy lifestyles in the formative years will lead to healthy ageing in future. The motto should be to change to quality of life and add life to years and not only to increase longevity by reducing morbidity and mortality.

To improve the health status of elderly, action on many fronts is required. An expanded old age pension scheme to include private sector, subsidized health care network, increased standard tax deduction for senior citizens, legislation on parents' right to be supported by their children, easy access to housing loans and special provisions in the Indian Penal code for protection of older persons, hospices for the chronically ill and deprived and mobile medical units of health services, special camps and access to ambulance services to enhance accessibility and use of hospital services, would go a long way in providing medical care and support to the elderly.

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Living Arrangements and Health Status of the Rural Elderly of Naogaon District, Bangladesh

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ABSTRACT

This paper focuses on living arrangements and health status of the rural elderly population, using 300 data from rural areas under Naogaon district out of which 160 are male and rest are female. The study reveals that most of the older persons are illiterate and unhealthy and they have been suffering from more than one disease like arthritis, gastric, eye problem asthma etc. Also the study shows that most of the older people are living with married children, which indicates that older persons like to live in a family atmosphere. A multivariate technique is used to extract which factors are influential for living arrangement and health status in terms of morbidity of the elderly population. Results indicate that 91% elderly are less preferable to living with married children whose monthly income is below 3000 taka. For health status in terms of morbidity reflect that 59% elderly (60-69) have less risk to suffer from any disease than 70+ years aged population.

Keywords: Ageing, Living arrangements and Health status.

Aging is one of the emerging problems in Bangladesh. This problem has been gradually increasing with its far reaching consequences. According to BBS (2001) percentage of aged population (60+) is only

6.13. This number will reach 14.6 million (about 9 percent of the total population) by the year 2025 (Concepcion, 1987; East-West Center, 2002). But Abedin (1996) focused on "The aging in SAARC Countries" does not appear to be alarming till to-day-percentages of the elderly vary between 5 to 6.

Living arrangements are an important component of the overall well-being of the elderly. In the absence of well-developed systems for providing social services to the elderly, the elderly must rely on those with whom they live in close proximity for economic, social and physical support as their economic productivity and health declining (Domingo and Casterline, 1992). In Thailand, there is a widespread expectation that the elderly will be taken care of by their children and that at least one child will co-reside with them (Cowgill, 1972; Knodel, Havanon and Pramualratana, 1984; Pramualratna, 1990; Tuchrello, 1989). It was found that survival of elderly is increased if they live with a spouse or sons and daughters (Mostafa and Ginneken, 2000). Murray *et al.* (1992) observed that the ratio of self-perceived morbidity varies by disease and across communities. They found that morbidity generally increases with age, is greater for men than women, and is more common among the rich than the poor. Although social support has a major impact on the health and well-being of the elderly, it is less clear how this effect might operate (George, 1989).

Unlike elderly men, who may have their wives to depend on when they fall ill, older women are quite likely to have to rely on children and other relatives. Older women face different health problem compared to older men. From a study by Kabir (1994), the aged in Bangladesh shows a depressing picture. In this survey, among other things, about 77 per cent of the total sample reported that they did not have adequate income to meet their basic needs. One out of every three in the sample suggested that government should come forward to help the aged, while some also suggested that the state should provide food and medical treatment at a nominal cost. So, the long term caring need of the aged in terms of community and institution based services is going to be a matter of great concern.

A survey study on living arrangements of the elderly and their sources of support reveal a predominant pattern of co-residence with

their spouse and/or their children (Samad and Abedin, 1999) and those who are not co-residents but live in close proximity of children and spouse. Thus, the living and health care arrangements of the elderly in view of demographic change and socio-economic transformation taking place in this country and also to explore the current situation and future trend of population aging under the changing condition, proper investigation is firmly needed. This study aims to fulfil this need.

Objectives

To understand the inherent peculiarities about the growing number of aged population the study is carried out with the following objectives:

- to investigate the socio-economic characteristics and living arrangements of the elderly population;
- to investigate health status and basic needs of the elderly population and
- to identify the more influential factors that are affecting living arrangements and health of the elderly population.

Methods

Sample

The data for this study were collected from 6 villages of rural areas under Naogaon district, about 34 km away from Rajshahi divisional town. One Thana was selected from this district. From all the unions of the Thana, a Union (9 Number Tentulia Union Parishad) was randomly selected and from this union 6 villages were randomly selected. 257 households which have the elderly population were selected out of total 610 households. All the elderly (300 elderly) persons aged 60+ years were interviewed, out of which 160 were male and 140 were female during 21st August to 1st September, 2006. The data were edited, compiled, computerized and processed by using SPSS 10.5 program.

In any situation where a multivariate problem is encountered, the method of analysis should proceed from simple to complex in an orderly manner (Srinivasan, 1979). We have performed univariate classification analysis in order to find percentage of those characteristics affecting living arrangement and health status of the elderly population. Finally, a multivariate technique named as logistic regression analysis was used

for determining factors that were affecting living arrangements and health status of the elderly population.

Results and Discussion

Percentage distribution of the elderly population by selected characteristics is presented in table 1. From this table we found that the study population contains 34.4% male, 46.4% female and for both 40.0% in the age group 60-64 which is called young old group. This percentage is higher than all other age groups. Majority of the study respondents are Muslim. Education is one of the important determinants of the social position of elderly person. Male elderly population is more educated than the female. Very few older males had completed education of 11+ years but no female elderly population completed 11+ years of schooling.

Majority of elderly males (94.4%) are married as compared with female elderly. There is significant difference between male (5.6%) and female (69.3) widowed. Most of the male and female elderly are living in a joint family. 34.4 per cent of the elderly male possessed greater number (7+) of living children in comparison to female elderly. In case of female elderly, 34.3 per cent respondents have 3-4 living children which is the highest. But on an average 32 per cent have 3-4 living children which is the highest for both population. Almost all male elderly have their own house while only 43 per cent female elderly have their own house. All male respondents said that they help to maintain the family but 73.6 per cent female elderly do this duty. Most of the older males participate in agricultural work which is 83.1 per cent while 63.6 per cent older female are housewives. Also table 1 shows that 33.6 per cent female do not work.

The study also shows that about 68 per cent male elderly have 3000+ Tk. monthly family income while about 60 per cent female elderly have < 3000 Tk. For both populations, 36.7 per cent have no land while it is 20 per cent for male and 55.7 per cent for female elderly population. That means 80 per cent male and 44.3 per cent female have land. Source of drinking water, having a sanitary toilet, having electricity are also important aspects of the elderly population. We observed that tube well is the main source of drinking water for the elderly population, they donot use pond or tap as source of drinking water. Majority of the

elderly have sanitary toilet, which is 91.9 per cent for male, 82.9 per cent for female and 87.7 per cent for both population respectively. About 75 per cent elderly population still remains outside the electricity facility in rural Naogaon.

Table 1 : Percentage distribution of the elderly by basic characteristics and by sex

Socio-economic characteristics	Male		Female		Both	
	Freq	% N=160	Freq	% N=140	Freq	% N=300
Age Composition						
60-64	55	34.4	65	46.4	120	40.0
65-69	31	19.4	26	18.6	57	19.0
70-74	39	24.4	19	13.6	58	19.3
75-79	13	8.1	7	5.0	20	6.7
80-84	9	5.6	12	8.6	21	7.0
85+	13	8.1	11	7.5	24	8.0
Religion						
Muslim	158	98.8	135	96.4	293	97.7
Hindu	2	1.3	5	3.6	7	2.3
Others	-	-	-	-	-	-
Level of Education						
No Education	60	37.5	129	92.1	189	63.0
1-5 years	68	42.5	9	6.4	77	25.7
6-10 years	20	12.5	2	1.4	22	7.3
11+ years	12	7.5	-	-	12	4.0
Marital Status						
Married	151	94.4	43	30.7	194	64.7
Widowed	9	5.6	97	69.3	106	35.3
Others	-	-	-	-	-	-
Type of Family						
Nuclear	66	41.3	52	37.1	118	39.3
Joint	94	58.7	88	62.9	182	60.7

No. of Living Children						
0	1	0.6	5	3.6	6	2.0
1-2	12	7.5	15	10.7	27	9.0
3-4	48	30.0	48	34.3	96	32.0
5-6	44	27.5	45	32.1	89	29.7
7+	55	34.4	27	19.3	82	27.3
Owner of House						
Yes	156	97.5	60	42.9	216	72.0
No	4	2.5	80	57.1	84	28.0
Help To Maintain Family						
Yes	160	100	103	73.6	263	87.7
No	-	-	37	26.4	37	12.3
Working Status						
Not Working	8	5.0	47	33.6	55	18.3
Agricultural	133	83.1	-	-	133	44.3
Service	7	4.4	-	-	7	2.3
Business	10	6.3	-	-	10	3.3
Begging	2	1.3	1	0.7	3	1.0
Housewife	-	-	89	63.6	89	29.7
Others	-	-	3	2.1	3	1.0
Family Income (In Tk.)						
<3000	51	31.9	85	60.7	136	45.3
3000+	109	68.1	55	39.3	164	54.7
Cultivable Land (In Begha)						
No Land	32	20.0	78	55.7	110	36.7
1 – 3	34	21.3	50	35.7	84	28.0
4 – 9	56	35.0	9	6.4	65	21.7
10 – 15	24	15.0	3	2.1	27	9.0
16 – 20	5	3.1	-	-	5	1.7
21 – 25	4	2.5	-	-	4	1.3
26 – 35	3	1.9	-	-	3	1.0
36+	2	1.3	-	-	2	0.7

Source of drinking water						
Tube well	160	100.0	140	100.0	300	100.0
Tap	-	-	-	-	-	-
Pond	-	-	-	-	-	-
Have a sanitary toilet						
No	13	8.1	24	17.1	37	12.3
Yes	147	91.9	116	82.9	263	87.7
Having electricity						
No	112	70.0	114	81.4	226	75.3
Yes	48	30.0	26	18.6	74	24.7

Living Arrangements:

The pattern of living arrangements of the elderly people may vary across their socio- economic and demographic background. From table 2 it is clear that 1.3 per cent of elderly male, 23.6 per cent of female and 11.7 per cent of both elderly are living alone. Also 35.0 per cent of male elderly, 14.3 per cent of female elderly are living with spouse. Majority of elderly persons living with married children which contains for male 59.4 per cent, for female 62.1 per cent and 60.7 per cent for both population. More or less, similar findings are also observed in some of the earlier studies conducted in rural India and Bangladesh (Vijayakumar, 1991; Mahanta, 1993; Samad & Abedin, 1999). Majority of the elderly live with married children perhaps indicates the availability of care providers. In the family, sons' wives very often provide care of their father-in-law. Married sons also get benefit from their old fathers they look after their children, keep watch on the households, do some light households work and so on. So both married children and the elderly get benefit from one-another financial, functional and materials.

Table 2: Pattern of living arrangements of the elderly by sex

Living Arrangement	Male		Female		Both	
	Freq.	%	Freq.	%	Freq.	%
Living alone	2	1.3	33	23.6	35	11.7
With unmarried children	7	4.4	-	-	7	2.3
With married children	95	59.4	87	62.1	182	60.7
With spouse	56	35.0	20	14.3	76	25.3
Total	**160**	**100.0**	**140**	**100.0**	**300**	**100.0**

Current Health Status and Health Problem

Health is a major concern of old age. It was found by Mostafa and Streatfield (2003) that worries among the poor were probably about inadequate economic support, poor health, inadequate living space, unfinished familial tasks, lack of recreational facilities and the problems of spending time. Many questions revealed information about health conditions of the elderly. According to Fillenbaum (1984), self-perceived health status may be better indicator of potential service use than of actual health condition. However, self-assessments of health are common components of population-based surveys. To calculate the health status respondents were asked a question 'what is your current health status?' The answers were recorded on a three-point scale: Healthy, fairly healthy and unhealthy. Table 3 shows the current health status of the elderly.

Sex is one of the key variables in health research. The females respondents are more unhealthy (59.3 %) than males (44.4%) as shown in table no. 3. Some studies (Strauss *et al.*, 1992; Mostafa, G and Streatfield, 2003) found that health problems increase with age, but that women reportd more health problems at earlier ages than do men. Lack of education is also associated with poorer health.

Health events are usually more frequent and become confused with one another. The illness of the elderly are multiple and chronic in nature. In old age the elderly are found to suffer from diseases like arthritis, gastric, blood pressure, diabetes, asthma and so on. Prevalence of malnutrition, eye-sight problems, hearing problems among the olds

are also observed (BDHS, 2000). The health problems in old age are often compounded by attributing ailment of onset of old age. The information in this regard is shown in table 3.

From table 3 it may be observed that nobody is free from disease and most of the elderly are suffering from more than one disease. According to the table, 21.3 per cent elderly males were suffering from arthritis and gastric whereas 23.6 per cent elderly female were suffering from gastric, eye sight problem and cough. For both population 16.7 per cent were suffering from at arthritis, gastric, eyesight and hearing problems. The information suggests that the elderly population in rural Bangladesh suffer from different types of health problems.

Table 3 : Percentage distribution of elderly according to the current health status and various diseases, by sex

Variables	Male		Female		Both	
	Freq.	%	Freq.	%	Freq.	%
Current health Status						
Healthy	30	18.8	16	11.4	46	15.3
Fairly healthy	59	36.9	41	29.3	100	33.3
Unhealthy	71	44.4	83	59.3	154	51.3
Types of Illness						
Arthritis (i)	13	8.1	10	7.1	23	7.7
Gastric (ii)	6	3.8	10	7.1	16	5.3
Eye Sight (iii)	9	5.6	2	1.4	11	3.7
Asthma (iv)	2	1.3	2	1.4	4	1.3
Cough (v)	9	5.6	2	1.4	11	3.7
Blood Pressure (vi)	12	7.5	2	1.4	14	4.7
(i) and (ii)	34	21.3	11	7.9	45	15.0
(i),(ii),(iii) and (v)	1	0.6	11	7.9	12	4.0
(i),(ii),(iii) and hearing problem	31	19.4	19	13.6	50	16.7

(ii),(iii) and (v)	14	8.8	33	23.6	47	15.7
(i),(ii) and (v)	4	2.5	13	9.3	17	5.7
(i),(iii),(v) and hearing problem	8	5.0	16	11.4	24	8.0
(ii) and Diabetes	7	4.4	5	3.6	12	4.0
(vi) and Diabetes	5	3.1	1	0.7	6	2.0
Other	5	3.1	3	2.1	8	2.7
Total	**160**	**100.0**	**140**	**100.0**	**300**	**100.0**

Health Care Facility and Basic Needs

Medical facilities are limited in Bangladesh and thus lead to greater problems for the elderly. The country has neither separate health care provision nor infrastructure for elderly population. As a part of a vulnerable group, the older population has a greater need for, but less access to health care. The medical facilities are not adequate to meet the health care requirements of the total population, let alone the elderly. The information about the nature of treatment of the elderly is shown in table 4.

Table 4 shows a significant percentage of elderly take treatment from M.B.B.S doctor, which contains 85.6 per cent for male and 69.3 per cent for female elderly, followed by village doctors 10.6 per cent and 28.6 per cent, also by homeopathy 3.1 per cent and 2.1 per cent respectively. In case of both population most of the elderly taking treatment from M.B.B.S. doctors which contains 78.0 per cent.

Elderly population particularly in rural areas lives in very poor condition. All the respondents were asked to express their opinions about the activities which should be taken for the welfare of the elderly population. The male and female elderly opined that the important basic needs are food, health care facility and security. Since more elderly women are widows they are considered to be marginalized group in Bangladesh because they occupy a very low social status. Consequently they have to face severe social, economic and cultural deprivations. Information on basic needs reported by the rural male and female elderly is shown in table 4.

Table 4 : Percentage distribution of source of treatment and basic needs of the elderly population by sex

Variables	Male		Female		Both	
	Freq.	%	Freq.	%	Freq.	%
Source of Treatment						
M.B.B.S	137	85.6	97	69.3	234	78.0
Homeopathy	5	3.1	3	2.1	8	2.7
Village Doctor	17	10.6	40	28.6	57	19.0
Other	1	0.6	-	-	1	0.03
Basic Needs						
Food	1	0.6	5	3.6	6	2.0
Treatment	58	36.3	22	15.7	80	26.7
Social security	2	1.3	2	1.4	4	1.3
Food and treatment	61	38.1	93	66.4	154	51.3
Treatment and social security	38	23.8	18	12.9	56	18.7
Total	**160**	**100.0**	**140**	**100.0**	**300**	**100.0**

Logistic Regression Analyses

Results based on the multivariate logistic regression analysis for living arrangements and health statuses in terms of chronic morbidity are shown in table 5 by considering current living arrangements i.e. living with married children as the dependent variable which is dichotomized by assessing 1 if the respondent is living with married children and 0 for not living with married children. For health status in terms of morbidity, the dependent variable is suffering from any chronic disease (among 10 selected diseases) during the last 3 months and coded as 1 = suffering with at list one chronic disease; 0 = not suffering with any chronic disease.

Results indicate that the significant value for living arrangement, respondents with monthly family income <3000 Tk. were (1-0.09) × 100 = 91% less preferable to living with married children. Respondent's work status also exerts significant effect on living behaviour among

elderly population. Hence in this case we found that working respondents are (1-0.13) × 100 = 87 per cent less preferably living with married children.

With regard to the significant values for health status, we found that the elderly population in the age group 60-69 have (1-0.41) × 100 = 59 per cent less risk to suffer from any disease than the reference category. The sources of treatment are also negatively significantly associated with dependent variable. The elderly who received treatment from M.B.B.S. doctors from various health related institutions, such as hospitals, clinics etc. were 0.49 times less suffer from any disease than the reference category.

Table 5: Result of logistic analysis on living arrangements and health status in terms of morbidity of the elderly population

Variables	**Living Arrangement**		**Health Status**	
	ERC	**Odds Ratio**	**ERC**	**Odds Ratio**
Respondent's age				
60-69 years	0.22	1.25	**0.89*****	0.41
70+ years (ref)	0.0	1.0	0.0	1.0
Respondent's sex				
Male (ref)	0.0	1.0	0.0	1.0
Female	0.41	1.50	-0.001	0.99
Respondent's education				
No education (ref)	0.0	1.0	0.0	1.0
1-5 years	-0.24	0.79	-0.49	0.61
6+ years	0.43	1.5	-0.52	0.60
No. of living children				
0-4 (ref)	0.0	1.0	-	-
5+	0.16	1.17	-	-
Monthly family income				
<3000 Tk	**-2.44*****	0.09	-	-
3000+ Tk (ref)	0.0	1.00	-	-
Respondent's land				
0-3 Beghas (ref)	0.0	1.00	-	-
4+ Beghas	-.001	0.99	-	-
Respondent's work status				
Not working (ref)	0.0	1.0	-	-
Working	**-2.03*****	0.13	-	-
Marital status				
Married (ref)	-	-	0.0	1.0
Widowed	-	-	0.30	1.36
Source of treatment				
M. B. B. S.	-	-	**-0.72***	0.49
Others (ref)	-	-	0.0	1.0
Constant	**2.97*****		**2.54*****	
-2 log likelihood	305.202		297.46	
Model ÷^{2}	96.928		18.69	
Df	8		6	

Notes: ERC = Estimated Regression Coefficient;
ref = Reference Category;
Df = Degree of freedom;
Coefficients significant at at least the 10 percent level are shown in bold type;
Level of significance: *** p < 0.01; ** < 0.05; *p < 0.10.

Conclusions and Recommendations

Elderly is a serious reality and it is the last step of life cycle. None can avoid this stage. At present global population situation in respect of age structure the elderly 60+ is a growing segment. The study shows that 63 percent elderly have no education and three quarter elderly are out of electricity. Most of the elderly live with the married children. Most of the elderly live with the married children and with their spouse. Those, who are working and whose monthly family income are <3000 Tk. are less preferable to live with married children. More than fifty percent elderly are unhealthy and about eighty percent elderly have been suffering from more than one disease. Those, who are 60-69 years aged and receive their treatment from M.B.B.S. doctors, have less risk to suffer from any disease.

Policy makers and planners, community leaders as well as government should look on those forces that have adverse effect on the capacity of the family to support and care for older persons. Mostafa and Streatfield (2003) documented that both the proportion and the absolute number of the aged people in Bangladesh will be increasing in the coming years and old age dependency is rapidly increasing with population aging. This means that the working -age population will be called upon to provide support for a larger proportion of the aged in the future. Thus the government should give economic security such as pension, medical allowance, recreational facility, etc.. To improve health and sanitation facility and overall betterment of elderly people, necessary curriculum should be included in the national text. Since aging is the process of life. We will be aged if we live longer. If we want to live in peace and harmony at the age of 60+ yrs, the nation come forward for the well being of our respected senior citizens of Bangladesh from now.

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Modernization Theory and its Implication on the Elderly in Rural Bangladesh: An overview

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ABSTRACT

Like other developing countries, the aging population in Bangladesh is increasing rapidly. The existing structure of society is changing because of mass education, urbanization, migration, poverty, landlessness, and unplanned urbanization. It is the modernization theory which argue that when a society is changed due to these factors (according to them which are the symptoms of modernization) the status of the elderly declines. In order to examine the extent to which modernization theory describes the status and situation of the elderly in rural Bangladesh, this paper will discuss the various assumptions and schools of thought relating to modernization theory. Finally, it will examine the extent to which western theory is applicable in a country like Bangladesh where the socio-economic condition is somewhat different and strong religious and social values inspire other family members to take care of elderly and a joint family structure is still the norm. This article will also focus a little bit on various theories of aging in order to get an idea about the theory areas relating to elderly.

Keywords : Modernization theory, Care of elderly, Socio-economic condition, Social values.

With a population of approximately 137 million (United Nations, 2000) in a geographical area of 1, 47,570 sq. Km. (Bangladesh Bureau

of Statistics 1995), Bangladesh has one of the highest population densities (931 people per sq.km.) in the world (World Bank, 2000). A decrease in fertility rates and an improvement in the average life expectancy have led to rapid increase in the number of older people in Bangladesh, with 80,000 new elderly added to the over 60 age range each year (Escap Population Data Sheet, 1999). Today, people who are 60 years and older make up 6% of the population of Bangladesh. While this percentage is small relative to developed countries, due to the large size of the population, it represents approximately 7.3 million people. Furthermore, projections indicate that the number of older people will increase by 173% by 2025 (Escap Population Data Sheet, 1999).

One implication of the expected increase in the number of older people is a higher dependency ratio. As young wage earners become a smaller proportion of the population, they will have to take a greater responsibility for a growing proportion of the older people. The old age dependency ratio (persons 60 years and over divided by persons 15-59 years) is projected to increase from 8.0% in 1995 to 16.2% in 2025 (Kabir, 1994). Country wide, poverty is exacerbated by problems of landlessness, unemployment, low education, high population growth, unequal land distribution, and natural disasters such as floods, cyclones and drought that displace large numbers of people. These problems hit older people very hard, as they are already in a vulnerable position due to their age.

Traditionally, the most fundamental social unit to which older persons belong is the family. In providing all sorts of supports to the elderly, family members play a vital role in society (Martins, 1990, Cain 1991). However, family roles and functions are shrinking due to economic development. Traditional support systems for older people in Bangladesh are based on joint family structure and kinship to ensure older people's care, security and respect but this has been declining (Chaudhury, 1982; Perera, 1987; Mizan, 1994).

With the rapid decline of the joint and extended family system, the community no longer protects older people's rights as in the past. As a result, older people have largely been displaced in the community and are vulnerable to isolation, deteriorating health and poor living conditions. (Amin, 1996; Kabir and Salam, 2001).

From the above discussion, it is clear that as the country becomes modernized, the existing socio-economic scenario is changing rapidly. But we are still not sure what the real impact of these transitions are on our elderly. The aim of this paper is to find out the impact of modernization on the elderly. In a later section, I will try to address this question.

Major Theories of Aging:

In the past decade, there has been a significant growth in the amount of research on the sociology of aging. At the same time, there has also been greater concern for the theoretical underpinnings of aging research. While early social gerontological theories focused primarily on individual difficulties in adjusting to old age, later perspectives have taken into account broader issues regarding social aspects of age and aging (Passuth & Bengtson 1988). However, if we categorize theories of aging, we will find that they have emerged, implicitly, from five general sociological perspectives: structural functionalism, exchange, symbolic interactionism, Marxism and social phenomenology.

Although a number of these theories treat and examine race, gender, and class as individual attributes and as social mediators of the aging experience, these variables are neither theorized nor examined as structural or societal phenomena, nor are they problematized in relation to understanding the broader division of labor or the allocation of resources within society (Estes *et. al.,* 1996). As a result, not one of these theories fully explains the aging process. As mentioned by Merton (1957), there is a lack of grand theory in aging and most theories fit into what Merton called "middle range theorizing". As a result, policies derived from these theories often do not adequately address the diversity and heterogeneity of the experience of the aging population.

Major Sociological theories	Major Theories of Aging
	Disengagement
Structural functionalism	Modernization Age stratification Life Course
Exchange	Exchange Activity

Symbolic interactionism	Social Breakdown subculture
Marxism	Political economy of age
Social phenomenology	Social phenomenology

(Passuth M and Bengtson 1998).

In this section, I would like to discuss some of the major theories in brief and then try to determine which theory is best suited for discussing the "Situation of the Elderly in Rural Bangladesh."

The Disengagement theory: The disengagement theory of aging argues that as people get older, their abilities decline and hence, they seek to decrease their activities, assume more passive roles, and interact less frequently with others. As an adaptive process, they shed or lose many of their societal roles including those related to work. This disengagement is seen as normal and beneficial to both the persons involved and society. The elderly benefits from the later, by means of transfer of power and roles to the younger cohorts (Cumming and Henry, 1961). This theory looks at old age as a time when both the older person and engage in mutual separation, as in the case of retirement from work. This process of disengagement is understood to be a natural and normal tendency reflecting a basic biological rhythm of life (Moody, 1998). However, the theory's assumption that the process is inevitable, functional, and universal has been justly criticized Roadburg, 1989, Mcpherson, 1998). It fails to explain why there are many who choose not to disengage, and of those who disengage, involuntarily.

As many older persons may still desire to maintain social contact, social groups may impose disengagement through forced retirement and exclusion from activities requiring speed, endurance, and prolonged concentration (Fry, 1992:263). To be cross-culturally comparable, this theory (disengagement) need some sort of domain specification. At the opposite pole from disengagement theory is the **activity theory** of aging, which argues that the more active people are, the more likely they are to be satisfied with life. Activity theory recognizes that most people in old age continue in the roles and life activities established earlier because they continue to have the same needs and values. A similar point is made by the **continuity theory** of aging, which notes

that when people grow older, they are inclined to maintain the same habits, personalities and styles of life they developed in earlier years as much as possible. It assumes that persons have different personalities and life styles and that as a means of adaptation in old age, they seek to hold on to their core characteristics and values. They continue to maintain the same means of adaptation to their environment and seek to replace old roles with new ones. For satisfaction in life, those who were active in their younger years would, as much as possible, continue to be so in their old age.

Obviously, these two theories fail to account for the life satisfaction and successful adjustment of those who do choose to disengage; those who, after many years of active life, would prefer 'take things easy' in their old age.

On the other hand, the **exchange theory** attempts to explain why older people tend to withdraw from social interaction. The proponents of exchange theory argue that the aged have less power in encounters with younger people because they possess fewer resources (i.e. lower income, less education, poorer health); continued interactions with the elderly become more costly for younger age groups. The outcome is that older people decrease their participation in social life. Only those elderly who have the necessary resources to sustain a relationship with other age groups remain actively engaged in ongoing social affairs (Dawd, 1975).

The **Labeling Theory** suggests that labels given to people in society will influence how they think about themselves and how people relate to them. For example, negative labels about the elderly such as "grumpy" and "senile" are likely to influence young people's tendency not to help the elderly, while positive labels like "wise" and "experienced" are likely to influence young people's tendency to help the elderly (Eyetsemitan, 2000).

Modernization theory

Modernization theory (Cowgill, 1974, Cowgill & Holmes, 1972) attempts to explain variations in age status both historically and across societies. It focuses on the macro-structural conditions of the elderly in varied socio-cultural settings. It is a functionalist perspective in that it suggests that the status of the elderly derives from their relationship to

evolving systems of social roles which vary across societies depending on the degree of industrialization (or "modernization"). From this perspective, structural changes in a society occur in a particular way, regardless of historical or cultural context.

An early statement of the theory, suggesting that modernization led to lower status of the older person within the family, can be found in a work by the great functionalist theorist (Durkheim, 1964). Modernization is related to loss of status through its removal of roles from the aged that are functionally important for the survival of society. Asking "what are the criteria by which western cultures may be differentiated from those of other peoples?' Burgess (1960) listed 'industrialization and the growth of cities,' 'the rise of science and technology,' 'medical science and the prolongation of life,' 'the growth of democracy' and 'the development of social gerontology,' as possible answers. According to Burgess, many of these factors have had an adverse impact on the social status of the aged, leading to "role-less-role" for the elderly.

According to modernization theory, the status of the elderly declines as societies becomes more modern. The modernization theory of aging suggests that the role and status of the elderly are inversely related to technological progress. Whereas in earlier pre-industrial societies, the elderly held high status by virtue of their control of scarce resources and their knowledge of tradition, they have lower status in present industrialized societies. In this regard, Cowgill outlines four elements of modernizations; health technology, economic technology, urbanization, and mass education- which result in the lowered status of the aged. Cowgill and Holmes (1972) point out several crucial aspects of urbanization and industrialization which impinge on the family system and the status of the elderly. First, industrialization calls for physical movement from one locality to another, providing the young generation a greater opportunity to free themselves from the authority of the aged. Secondly, the proliferation of urban and industrial institutions, such as schools, police departments and banks, has undermined large corporate kin groups since they now handle the problems that were solved within the kin network before industrialization. Thirdly, industrialization creates a value structure that recognizes achievement more than age. A majority of modern jobs are allocated on the basis of ability rather than family

connection. Consequently, the elders have little to offer the younger generation in exchange for its acceptance of the familial order. Thus, compared to the traditional society in which most earned their livelihoods by cultivating land which was commonly owned by the elders, the aged now have a substantially reduced basis upon which they can enforce their power. As a result of these changes, " in proletariat societies [the functions of old people] are likely to be viewed as vital social functions, while in modern societies, they tend to be seen as peripheral and unimportant" (Ibid).

Simmons may be said to be a pioneer in the anthropological study of the aged. Until the 1945 publication of his classic, 'The Role of the Aged in Primitive Society', most anthropologists saw the aged only as sources of general ethnographic data. Based upon a variety of monographs, Simmons studied the treatment of the elderly in seventy-one primitive tribes in various parts of the world. The tribes differ from each other in levels of technology, environmental settings, and cultural complexity. Simmons' findings suggested that while the treatment of the elderly varied widely in the different tribal settings, there were a number of tendencies based on the level of technological development. Generally, Simmons' work indicated:

"a) the status of the aged stemmed from the force of tradition and from the special skills and knowledge that they possessed;
b) that security for them was derived from property rights;
c) that food was assured through communal sharing, kinship obligations and from food taboos from which aged are exempted
d) that their general welfare was at least in part the result of routine services of an economic and personal nature performed by the aged; and, finally,
e) that security derived from ability to wield civil and political power as a result of individual ability or as a combination of social and cultural conditions (Holmes 1976)."

Simmons was criticized by various researchers, including Maxwell, (1970) who criticized the sampling procedure. Press and Mckool's (1972) research findings suggest that the aged are in relatively inferior positions where society is characterized by economic heterogeneity, the nuclear family, and increased bureaucratization of political and ritual

functions. In summary, they see lower status of the aged associated with the process of modernization.

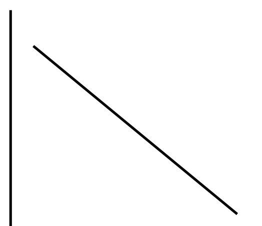
Cowgill and Holmes (1972), in their studies found a strong association with modernization and decreased status of elderly. They reviewed studies of fourteen contemporary societies from around the world and found that the status of older people decreases with increases in modernization. They discuss thirty propositions dealing with the treatment of the aged in various societies ranging from primitive to modern on a societal continuum. These propositions were analyzed in terms of studies contributed by eight anthropologists, seven sociologists, two psychologists, and one social worker.

Palmore and Mauton's (1974) studies reveal somewhat different findings. In a study involving thirty one countries, it was found that at a certain point in the modernization process, the relatively low status of the elderly may "bottom out" and then start to improve. In other words, the status of the old drops at the start of modernization.

Understanding Well-being and Development Interrelationship: Three Schools of Thought

There is no consensus in the literature regarding the impact of development, economic and/or social, on the well-being of the elderly. Hugo (1991) suggests that it is possible to recognize three broad schools of thought with respect to the impact of development upon the well-being of the elderly. Hugo's viewpoint is based on the works of Cowgil and Holmes (1972), Hunt (1978) and others. The model as suggested by Hugo is depicted graphically here.

i. DECLINE IN WELL-BEING

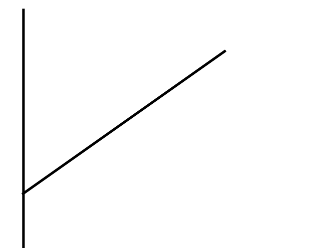


(Time and Economic Development)

ii. INITIAL DECLINE FOLLOWED BY IMPROVEMENT

(Time and Economic Development)

iii. LITTLE CHANGE OR STEADY IMPROVEMENT



(Time and Economic Development)

Figure 1: Model showing the relationship between development and well-being of the aged

Model-1 indicates the decline in the level of well-being of the elderly with time and economic development. Following the work of Cowgil and Holmes (1972), this model suggests that the status of the elderly declines with the pace of economic development. Cowgill argues that processes associated with development (industrialization, urbanization, modern health technology and mass education) result in a deterioration in the well-being of the elderly by trapping them in traditional and lower paid jobs, separating them from families, depriving them of meaningful roles and in general, lowering their status in relation to younger groups (Hermalin,1995). The relationship seems to be more or less linear.

Based on the observations of Palmore and Mauton (1974) and other researchers, Heisel (1985) suggests that 'the relationship between

the status and well-being of the aged and modernization may be U-shaped rather than linear'. This leads to the development of Model-II which shows the U-shape relationship between the pace of economic development and the level of well-being, indicating declination of the level of well-being of the elderly followed by improvement as economic development proceeds. The model represents a transition from high levels of well- being based on family support to high levels of well-being in which institutional supports are a major component. According, to this model, there is an intervening period of low average levels of well-being in which emerging government support is not sufficient to counterbalance the reduction in family- based support. Essentially then, this model is one in which it is assumed that formal institutional support systems are gradually developed to substitute for informal system which are weakened as social and economic change occurs (Hugo,1996).

The third model, Model-III, which is based on the European Experience of intergenerational relations within families and the well-being of the older people, suggests that the decline in family support with development has been exaggerated and that family support of the aged has been maintained (Hunt, 1978). The model indicates a little change and steady improvement in the level of well-being of the elderly with the pace of development reflecting the desire of the elderly for greater autonomy and freedom and their improved average economic situation which allows maintenance of independence as long as possible (Wall,1984; Michael *et. al.,* 1980).

Regarding the three models, Hugo (1996) points out that they are too simplified but do indicate the wide range of views which are currently held on the implications of development on the well-being of the aged and it is likely that the older generation in many countries (like Bangladesh) will not be able to count upon the degree of support from their families that has been the case. However, the model(s) are yet to be tested empirically in the case of Bangladesh.

Modernization theory, though frequently cited, has also been frequently criticized. As Goldstein and Beall (1982) have argued, it is an over simplification of reality, and subscription to it may lead to overlooking the difficulties that some elderly persons experience living in extended families and in rural societies. We have only limited evidence

about the past in South Asia, including Bangladesh. There are some evidence from so-called primitive societies that high status in old age was not necessarily guaranteed (Simmons 1945), and it is not clear that coresidence of the elderly with their children has thus far declined in Bangladesh.

Modernization theory has also been criticized for aggregate data obscuring within group differences even within one culture, let alone in a cross-cultural context. If it is implied that older people as a category may be viewed as the new proletariat, it obscures the fact that some old people are independently wealthy and educationally privileged above the average citizens. Sometimes in the less developed nations, family pick up the slack and provide the older generation with a safety net, whereas the older people in the modern society are seen as more wealthy and self-sufficient but isolated from their kin. At the same time we might argue that in some cases instead of decreasing the status of the elderly, modernization might open the windows of opportunity for the elderly. Due to modernization, more women went out of their homes for work when they need someone to look after their children and the elderly, especially the grandfather and grandmother, are the best people to look after the kids during this time. In Bangladesh research by Islam (1974), Aziz (1979) and Nath (1981) found excellent relations between grandparents and grandchildren. In this case, we can argue that Western theorists produce knowledge ignoring the experience of others and this is not surprising given that the discipline of gerontology itself has been slow to embrace the Third World view and perspective. Calasanti (1993b) for example, points out that, by and large, "gerontological theories are based on the experiences of white, middle–class men." These theories serve to produce select Western facts, denying the facts experienced in other parts of the world. Smith (1999), also mentions the same fact; "it appals us the West can desire, extract and claim ownership of our ways of knowing, our imagery, the things we create and produce." As Foucault (1977, 1978, 1980) has so vividly shown, knowledge and power are inextricably linked. For Foucault (1981), any emancipation that "is to be done ought not to be determined from above by reformers…. The problem, you see, is one for the subject who acts."

Further specification of the work life cycle involvement is needed to be able to make any categorical claims on the relationship to the means of subsistence on group level. Without this, cross-cultural comparisons are not tenable (Dixon, 2001).

Increasing or Decreasing Status of the Elderly: What Do we Know about Rural Bangladesh?

To compare the status of the existing elderly we really need to know the past status of the elderly. However, we know very little about the status of the elderly in the past. As we have mentioned earlier, the elderly problem is a new phenomena for a poor country like Bangladesh. Still, society is ignorant about the problem. In order to assess whether modernization affects our elderly or not, we need to look at the day- to-day reality of the elderly and the socio-economic trend of the society. In order to understand this matter, I will use some criteria and on the basis of these criteria, I will assess the situation of the elderly citing existing literature.

Bangladesh is predominantly an agrarian country. About 64 percent of the total population are engaged in agricultural occupation. Although Bangladesh is experiencing the process of rapid urbanization but it still remains rural as 80 percent of the population are living in the rural regions. The situation of the elderly in Bangladesh, whether they live in urban or rural areas, is pitiable. But rural elderly face more problems than urban elderly as the level of poverty in rural areas is more widespread. As Davis (2001) suggests, over the years, the incidence of rural poverty has been greater than that of urban poverty. Poverty is very much a rural phenomenon with 93 percent of the 'very poor' and 89 percent of the 'poor' living in rural areas in 1996.

As a result of rapid transformation and polarization of the Bangladeshi society, there is little doubt that poverty poses a threat to the integrity of the family in rural Bangladesh, eroding patriarchal and generational authority, and weakening bonds of obligation between family members. While it is far from clear that economic conditions in Bangladesh have, in the aggregate, worsened during recent years, it is certain that the pool of the landless and impoverished in rural areas have increased in numbers, and probably in proportion, and that within this group the proportion of those who are desperately poor has also

grown. For this segment of the population, relative to the more stable and prosperous majority, life can truly be brutish and short, and the quality of life for those who survive to old age is likely to be very poor (Cain,1991). A study by Susanne and James (1992) found the same scenario:

"Village life has changed drastically over the past few decades, sweeping away many conditions that gave security and stability to the lives of older people. Many villagers today no longer have free use of a plot of land, or their plot is too small or arid to support them. Growing population, deteriorating environment and specialized agriculture that favors big farmers-these are some of the factors that deprive families of adequate land. Instead of subsistence farming, people must now work for wages, often on a large farm or plantation, raising cash crops like tea or jute, or sugar cane or pineapples. In Bangladesh, half of all rural families are landless-up from one in five just thirty years ago."

Living arrangements are an important component of the overall well-being of the elderly. By analyzing the quality of living arrangements one can gain a critical perspective regarding the elderly's situation within the household. This also indicates the form of intergenerational support, respect, responsibility, and cohesiveness within generation. In Bangladesh, it has traditionally been the responsibility of the family to provide food and shelter for its elderly members. More specifically, traditional norms in Bangladesh, as in other South Asian countries (Jefferys, 1996), demand that sons are responsible for financial provision, while the daughters-in-law are responsible for providing day to day care. This tradition may be related to a situation where extended families reside together and/or to inheritance structures favoring sons. The traditional system of inter-generational co-residence is said to be widespread in Bangladesh. Martin's (1990) research in a number of countries of South Asia, including Bangladesh, provides evidence that the majority of elderly people continue to live within extended family settings both in rural and urban areas. A persistence of traditional living arrangements, in which sons play an important role of the overall well-being of the elderly. In Bangladesh, there is widespread expectation that the elderly will be taken care of by their children. It is the children's responsibility to take care of their parents when the parents get old. For example, Cain (1986) reported that in a 1976-78 study of 343

households in a Bangladeshi village, 64 percent of the 94 persons ages 60 and over were living with a married son and 16 percent were living with an unmarried son age 15 or over. Only two percent of the elderly were living with a married daughter. Cain's (1991) research also points out that social changes have not eroded the significance of the joint family. Cain suggests a strong correlation between the existence of the joint family and the well-being of the elderly in India and Bangladesh; contrary to what many have suggested, social changes have not eroded the significance of the joint family in the context of South Asia. Kabir *et al.* (1998) mention in their study that a large number of elderly people reported living with their offspring (rural: 70%; urban: 86%). Another 23% of the elderly people in the rural area report sharing the same residential compound with their children. Household structure and family living arrangements for elderly women in rural Bangladesh, elderly especially the women rely extensively on family support.

Social, economic and demographic changes have led to some changes in family structures, such as an increase in nuclear families. Nonetheless extended families with older people co-resident are still the norm. It has been generally assumed that the persistence of the extended family and multi-generational living arrangements denotes that the elders in the developing world are well cared for by their family members. Co-residence, however, does not mean that resources are being distributed evenly or that older people are being cared for. A study by Kabir and Salam, (2001) also suggest that families remain a primary source of support, but they are getting weaker due to break down of traditional family structure, joint to nuclear family and increasing poverty. While older people say that family support systems remain "strong", they also indicate that they are losing respect and not being cared for. This demonstrates that while on the surface family support (e.g. co-residence) continues, caring resource and respect) is declining. Goldstein, Schuler, and Ross (1983) provide a powerful example of poor relations in a quotation from one of their elderly respondents in Kathmandu: "though we live in the same house, I have not seen my son for many days… At my son's house I am nothing. His pet dog is cared for better than me." Vatuk (1980), comments on family relations of the elderly in 1974-76 in the village of Rayapur (now a part of New Delhi): "In fact, physical neglect of the old in this relatively affluent

stratum is rare, but subjective feelings of neglect among the old, and actual neglect of their affective and social needs when they become physically feeble or incapacitated is not uncommon." Finally, D' Souza (1982) cites a study in Meerut (India) which indicated that more than half of the respondents felt "neglected or indifferently treated," even though they were living with family members. A study by Martin (1990) also echoed the same thing:

"The term family care has a beautiful and noble connotation, but, in many cases, it is accompanied by the painful sacrifice of the caretakers, and the quality of care is frequently poor …..it cannot be taken for granted any more, even if it could in the past, and where it is forthcoming, it is often insufficient both in the degree and quality necessary for the welfare of the elderly".

In the Bangladeshi context, because of traditional norms, religious and social values, most of the elderly people are living with their offspring but at the same time it should be elicited that how easier this co-residency is? Because of widespread poverty and socio-economic changes, living together is no guarantee of economic well-being of the elderly. Soodan (1982) mention that the overall status of today's elderly, at least, is more directly related to their economic status than to their age or place of residence. He concludes that the status of elderly South Asians appears not to be guaranteed by virtue of their age or coresidence with offspring. Rather, status is more likely a function of sex, health and economic resources. The study concludes that status difficulties of the elderly are understandable apart from urbanization and industrialization, and that a variety of circumstances, such as illness, death of spouse, and economic adversity, can contribute to them. He argues that such difficulties are "inherent in traditional family and village life, and have precedents running deep into the history of Indian society." Sodan (1982) cites several more recent studies of social status of the elderly in both urban and rural areas of India and concludes that the overall status of today's elderly, at least, is more directly related to their economic status than to their age or place of residence.

It can be noted that though elderly women are often cared for and revered by the younger generation this situation does not always prevail or exist, especially for elderly women whose position is closely associated with her husband's authority. As a result, husband's death

can be a critical transition for the woman in terms of her role in the household, because her primary source of power is gone. Depending on the dynamics of the relationship between the widow, her son, and her daughter-in-law, the widow's position of authority may continue unchanged, or it may be lost in whole or in part.

Conclusion

From the above discussion, it can be said that the proposition of modernization theory is not totally fit for a developing country like Bangladesh. Impressionistic accounts of the elderly and their circumstances,.based mainly on ideological and theoretical views, can be quite misleading if not verified by actual data derived from systematic data collection procedures. Predictions based on social theory are no substitute, especially since they are so often derived from preconceptions that have not been empirically grounded in the first place (Hisimoto *et al.,* 1992). While talking about modernization theory, we should keep in mind that condition may vary from society to society, depending on the process of modernization, government policy and people's norms and values. All these factors have a cumulative impact on the process. The findings of this paper suggest that though Bangladeshi society is being modernized and the impact of modernization is intense, family still plays a vital role in caring for elderly people. When the result of living arrangements reported in the studies above are compared with the living arrangements of elderly in the more developed countries in the West, a very clear contrast emerges underscoring just how different the nature of the familial system of care and support is between Asia and the West. It is not uncommon to find 25-40 percent of the total population aged 65 and above in Western countries living alone (Kinsella, 1990). Many others live only with a spouse and relatively few live with their children. For example, only 14 percent of Americans aged 65 and older in 1975 lived with one or more of their children, while fully three fourths lived either alone or with a spouse only (DeVos and Holden, 1988). At the same time, it should be noted that the elderly are looked after by the family, though we need to critically reexamine the quality of living arrangements. We are uncertain what would be the future arrangements of the support system for the elderly as social structure (e.g. family size, migration, industrialization, landlessness, and poverty) is rapidly changing in rural areas.

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Attitude of Nigerian Retirees Towards Retirement

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ABSTRACT

This study investigates positive and negative attitude of male and female Nigerian retirees in Ondo State, Nigeria, towards life after retirement. Early studies focused only pre-retirement education and attitude towards retirement. In the present study effort was made to relate some selected background characteristics to attitude towards life after retirement The data for this study was obtained from a random sample 282 retirees in Ondo State, Nigeria. The findings show that men are significantly more likely to have a positive attitude towards retirement than women seeing retirement not as the end of life. In addition, men are about three times significantly more likely to report happiness in retirement than their female counterparts.

Key words : Retirement, Attitude, Male, Female

Retirement is the status of a worker who has stopped working usually upon reaching a determined age, when physical conditions do not allow the person to work any more. This may be due to illness, accidents or for personal reasons. Nigeria has a systems to provide pensions on retirement in old age. The financial weight of provision of pensions on a Nigerian government's budget is heavy and this is the reason for new pension reforms.The cost of health care in retirement is large, because people tend to be ill more frequently in later life.

There is also pressure to reform healthcare systems to contain costs, or find new sources of funding.

The kind and degree of orientation an employee has towards his or her job affects his orientation to retirement. How employees feel about their jobs affects how they feel about leaving those jobs. For instance, professionals who receive intrinsic rewards from the work often delay retirement. On the other hand, employees who have worked at routine and unchallenging jobs all their lives are often eager to retire (Quadagno, J (1966). This assumption has been shown to be partially true.

For instance, Friedman & Havighurst (1954) found that those who are less involved in work have a greater willingness to retire. Simpson, Back, and Mckineey, (1966) on the other hand found that only among upper occupational status persons the expected relationship between attitude to retirement and factors such as work commitment and intrinsic interest in work, was noticed.

Fillenbaum (1971) found that of the job attitudes examined, only one variable – possibility of achievement (referring to possible acquisition of further knowledge and skills) – appears to be related to retirement attitude, and then only among the elderly, among whites, and among males. Streib & Schneider (1971) found that, as respondents aged, they increasingly agreed that when people get older, they should stop work and take things easy. Distance from retirement and occupation has been found to be important determinants of retirement attitudes.

Ash (1966): Crook & Heinskein (1958); Feingold (1971); Katona, (1965); and Riley & Forer (1968) reported that persons closer to retirement have less favourable attitudes towards retirement than those farther away from it. Other scholars have found that occupation is associated with attitudes, although the relationships observed suggest conflicting interpretation. For example, Heron (1963) and Burgess *et al.,* (1958) reported that people in higher-level occupations held more positive attitudes towards retirement than those with lower level occupations.

Saleh and Otis (1963) found that workers not receiving satisfaction from their jobs looked favourably on the prospect of retiring. Parnes, Fleisher & Miljus and Spitz (1970) found that men highly satisfied with

their jobs were likely to report negative attitudes concerning retirement desirability. More recently, the MetLife survey of American attitudes towards retirement conducted by Zogby International in 2001 came out with the finding that half of their respondents (49%) look forward to retirement.

Respondent in the 47-55 years old group, 56 per cent look forward to retirement, compared to 41% of those 38-46 years old. Married respondents (53%) are much more like than single respondents (39%) to look forward to retirement. Respondents who are widowed/divorced /separated are far more likely (31%) than married or single respondents (18% average) to worry about retirement. Ogunbameru (2002) found in a study conducted among Nigerian academics, that respondents anticipated early retirement because they were dissatisfied with their jobs. The findings of this study supported the traditional assumption that workers who are not satisfied with their jobs would prefer to retire early, while who are satisfied would prefer to retire late. The job dissatisfaction expressed by the respondents and the early retirement anticipated are however due to the prevailing, conditions in Nigerian Universities, namely: loss of university autonomy, under funding and the general shortage of teaching and research materials.

Ordinarily speaking, retirement should be a simple experience. Once you reach the mandatory retirement age, an individual should be able to empty his or her desk or locker and say goodbye and leave the job-site and the labour force. However, the process of retirement in Nigeria does not generally follow the worldwide practice. Many Nigerians have been involuntarily retired for reasons other than ones stated in their letters of employment. This experience has led to a number of expectations and concerns about life after retirement. The present study was therefore conducted to investigate the attitudes of Nigerians toward life after retirement.

Method

The data for this analysis were obtained through the administration of mailed questionnaire on retirees in Ondo State, Nigeria. Respondents were randomly selected from the list of retirees. Copies of the questionnaire were posted to the 400 randomly selected respondents, and 282 questionnaires were properly completed and returned.

Data entry and analysis were done using EPI-INFO software. There were two levels of analysis namely the univariate and the bivariate analysis. At the univariate level, frequency distributions of important variables were obtained while pattern of relationships were tested using chi-square method at the bivariate level.

Background Characteristics of Respondents

Most of the respondents were in the age bracket 50-69. Slightly more than 5% were less than 50 years of age indicating that most of our sample either actually attained age of retirement or are close to it when they retired. More than 2 in every 5 respondents were in the age range 50-59 (43.6%) and almost the same proportion was between 60 years old and 69 years old (42.6%). Close to one-quarter of the respondents were at least 70 years of age as at the time of the survey. With respect to gender, more than three-fifths of the retirees were males compared with 35% who were females.

A consideration of educational background of the respondents revealed that more than half of the respondents (55%) claimed to have completed secondary education. While less than 10% reported that they had completed diploma education, slightly more than 10% have acquired first degree (11.7%).

About 12% of the respondents claimed they have also completed their masters' degree as at the time of the survey. Religion variable shows that the retirees were predominantly Christians (65%) while 35% are adherent of Islamic religion. Obviously there was no single unmarried respondent among the respondents, but a substantial number of them claimed to be widowed or to have divorced. On the whole, Close to 7 out of 10 retirees are currently married and are living with their spouses, less than 10% have divorced their spouse while one fifth claimed to have lost their spouse as at the time of the survey.

Results and Discussion

Attitude Towards Retirement

The study investigated positive and negative attitudes of the retirees toward retirement and most of them claimed that retirement had no association with health status. For instance, 78.7% disagreed with the assertion that when a person retires, his health is affected. The opinion

Table 1 : Percent Distribution of Respondents By Background Characteristics

Variable/ Category	Number (n=282)	Percent
SEX		
Male	183	64.9
Female	99	35.1
AGE		
Less than 50	15	5.3
50-59	123	43.6
60-69	120	42.6
70+	24	24.0
EDUCATION		
Secondary education	156	55.6
Diploma	21	7.4
First Degree	33	11.7
Masters	33	11.7
Others	39	13.8
RELIGION		
Christianity	183	64.9
Islam	99	35.1
MARITAL STATUS		
Married	195	69.1
Divorced	27	9.6
Widowed	57	20.2
Others	3	1.1

of the sample with respect to the claim that it is better not to think about retirement revealed that 9 in every 10 retirees disagreed with the claim. Close to 90 per cent of the retirees indicated that retirement is not the end to one's working activity while close to two-thirds reported that they agreed that there is a space for retirees in view of the large percentage of graduates in the country.

The distribution of retirees by when they finally retired from work showed variations in the year of retirement ranging from 1984 to 2003. However, the bulk of the retirees finally retired in the years 1998, 2000 and 2003. Before retirement, the minimum age a retiree reported to have spent in service was 12 years and the maximum of 42 years.

The study also investigated the basis of the sample's retirement and found that more than above one fifth of the retirees retired on the basis of old age. Slightly less than 25 per cent claimed they were compulsorily retired before they attained the age of retirement, while 4.3 per cent associated their retirement to ill health. Half of the retirees gave many reasons other than old age, illness and compulsory retirement.

More than half of the respondents (53.2%) claimed that they are currently on part time job since their retirement while just about two fifth (41.5%) claimed they had been on full time employment even after retirement Apart for the type of work the retirees reported that they do, some of the retired men and women still engaged in other activities like farming, business and community work during their leisure. A substantial number of them claimed that they used their leisure time to read the Bible.

Table 2: Percentage Distribution of Respondents By Attitude Towards Retirement

Attitudinal Indicators	**% Agree**	**% Disagree**
When a person retires, his health is affected	21.3	78.7
It is better not to think about retirement	8.5	91.5
Retirement is not the end to one's working activity	87.2	12.8
Considering the percentage of graduates, do you think there is a free space for retirees	64.9	35.1

Table 3 : Percentage Distribution of Respondents By Basis of Retirement

Basis of Retirement	Percent
Compulsory retirement	24.4
Retirement due to old age	21.3
Retirement due to ill health	4.3
Other basis	50.0

Table 4 : Percent Distribution of Respondents By Type of Work Since Retirement

Type of Work	Percent
Part time	53.2
Full time	41.5
Not working	5.3

Table 5 : Percentage Distribution of Respondents By Degree of Satisfaction and Happiness in Retirement

Degree of Satisfaction	Percent
Very satisfied	44.7
Satisfied	44.6
Dissatisfied	9.6
Indifferent	1.1
Degree of Happiness	
Very Happy	71.3
Just Happy	17.0
Not Happy	11.7

Attitude Towards Retirement by Selected Background Characteristics

There is a significant difference between the attitude of male and female respondents with respect to whether retirement is the end of life or not. For instance, slightly more than three-fifth of the respondents

who claimed that retirement was not the end of life were men compared with slightly below two-fifth of their female counterparts. Hence men are significantly more likely to have a more positive attitude towards retirement than women seeing retirement not as the end of life. In terms of the age differentials, close to half of the respondents are in age groups 50-59 (48.8%) and about 40% are in age group 60-69. Close to two-thirds (64.6%) of those who reported that retirement is not the end of life are Christians compared with 21.2% of the adherents of Islamic religion. The bulk of the respondents (58.5%) had secondary education and about 7 in every 10 claimed that their pension was not sufficient.

Table 6 : Attitude of Respondents Towards Retirement By Selected Background Characteristics

Variable/Category	Better not to think about Retirement (Percent)	Retirement is not the end of life (Percent)	Retirement adversely affects health (Percent)
SEX			
Male	62.5	61.0	75.0
Female	37. (ns)	39.0 (p<0.001)	25.0 (ns)
AGE			
Less than 50	5	6	5.0
50-59	37.5	48.8	35.0
60-69	25.0	39.0	20.0
70+	37.5 (p<0.001)	6.1(p<0.001)	40.0 (P<0.001
RELIGION			
Christianity	50.0	64.6	65.0
Muslim	50.0(ns)	35.4(ns)	35.0 (ns)
EDUCATION			
Secondary	62.5	58.5	55.0
Tertiary	37.5 (ns)	41.5 (p<0.001)	45.0 (ns)
PENSION STATUS			
Sufficient	25.0	29.5	20.0
Not Sufficient	75.0 (ns)	70.5 (p<0.001)	80.0 (p<.01)

Opinions with respect to whether or not to think about retirement also differ significantly across age groups. For instance, about 38% of respondents who claimed that it is better not to think about retirement are in age group 50-59 and 70-79 while the rest 25% are in age group 60-69. There are more males than females (62.5% vs. 37.5%) and the bulk of them had secondary education (62.5%) and is mostly people who reported that their pension is not enough (75.0%).

The bulk of the respondents who reported that retirement adversely affects subsequent health condition of retirees are in age groups 70-79 and 50-59 (40% and 35% respectively). There are more of Christians than Muslims (65% vs. 35%). Most of these respondents had secondary education (55%) and majority of them also reported that their pension is not enough (80%).

Conclusion

Our results suggest that, as men age, some project a more positive attitude towards retirement than women. Our findings also suggest that more men than women saw retirement not as the end of life.

Evidently, there is some relationship between some background characteristics and attitude towards retirement in Nigeria. More men than women retirees reported happiness in retirement. As men aged, some also projected happiness in retirement than their female counterparts.

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A Gerontological Social Work Perspective on Case Management with Elderly People

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ABSTRACT

The diverse and complex nature of providing services for an older population warrants comprehensive multidimensional assessment, Coordination of care and efforts to increase independence as much as possible. Keeping in view this phenomenon care management services with older persons, specially for those with long term care needs are becoming the requirement in every settings from NGOs to hospitals, from old age homes in India due to the rise in the number of older persons.

Key words : Case management, Coordination of agencies, Health care System, Social Worker Long term case needs

Case management has been a part of human service practice since the end of the nineteenth century, when Mary Richmond, one of the early pioneers of the field of social work, stressed coordination and consumer direction in social case work (National Association of Social Workers, 1992). In the 1920s and 1930s, an early form of case management was used in psychiatric care and by public health nurses (Huber, 2000). Case management emerged as a distinct concept in the 1960s to address the "complex, fragmented, duplicative and uncoordinated" systems that existed as a result of funding programs through strict categorical channels. The term case management began to appear in the literature in the early 1970s (Grau, 1984) of forms

across multiple settings and with a diverse array of goals and objectives. Since its inception, case management has emerged in a diversity of fields, including mental health, primary health care, long-term care, child welfare, disability, and aging (Moxley, 1996)

Traditionally, case management services for older adults were most common in not-for-profit agencies that primarily served frail, low-income seniors who were at risk for institutionalization. In more recent times, both public and private sectors have supported implementation of case management services with older persons, especially for those with long-term care needs.

Several factors have influenced the context for the development of case management services for older adults: population trends, such as the increased number of older Indians; advances in medicine resulting in prolonged life expectancies; families becoming more geographically dispersed; scarcity of resources, such as safe and affordable housing; the inability to contain the costs of health and mental health care; the privatization of care; and limitations of existing services in the community. The increase in the number of older Indians has been accompanied by an associated evolution of services for seniors, such as: home care, companion services, adult day care, home healthcare, housing, transportation, and home delivered meals.

These services, intended to help older adults remain in their own homes and communities, are provided mostly by NGOs and Voluntary organizations.. The result is a complex web of services and programs without a central point of entry. In an effort to help older persons and their families negotiate this intricate service network, many public and private programs developed case management as a core component of their services. Social workers are often called upon as first responders in addressing the psychosocial needs of older adults and their caregivers. As case managers, social workers often act as permanent consultants or facilitators in the lives of older people who may still be capable of handling their personal affairs, but who need help with the vicissitudes of aging. Additionally, increasing numbers of older adults have physical disabilities, cognitive impairments, or mental illness. Of particular concern are those with complex conditions marked by chronic physical or mental health problems, multiple co-occurring disease processes, and difficulties

with personal, interpersonal, social, and economic situations (Scharlach, Simon, & Dal Santo, 2003).

Definitions of Case Management

Case management definitions differ according to the source or type of the definition. For example, regulators may provide administrative definitions that describe the goals of case management, but do not provide detailed means for meeting these goals. Professional groups may provide definitions that consist of more functional descriptions, which include the steps or tasks involved in meeting the purpose that case management serves. Finally, experts in the field of case management can provide definitions based on actual research and experience in the field.

"Care or case management, including assessment, development of a service plan in conjunction with the consumer and other appropriate parties, authorization and arrangement for purchase of services or linkages with other appropriate entities, service coordination activities, and follow-up to determine whether the services received were appropriate and consistent with the service plan."

This definition focuses on the major tasks to be performed through the process of case management, emphasizing that case management has both consumer-directed and administrative components.

Applebaum and Austin (1990) define case management as "an intervention using a human service professional to arrange and monitor an optimum package of long-term care services." Case management has a unique role in assuring that vulnerable individuals receive the services they need.

The National Chronic Care Consortium, for example, describes the primary focus of case management as "coordinating services for vulnerable clients".

Great Britain's Social Services Inspectorate defines care management as "the process of tailoring services to individual needs" (Challis, 1999). However, case management also has an administrative function, which has become more prominent in recent years, including purchasing or allocating services, restraining costs and monitoring quality.

A comprehensive definition of case management, underscoring its procedures as well as its individual and system-level objectives, is provided by the Case Management Society of America: "A collaborative process which assesses, plans, implements, coordinates, monitors and evaluates options and service to meet an individual's health needs through communication and available resources to promote quality, cost-effective outcomes".

Lauber (1992) defines case management in community mental health facilities as "an integrated or coordinated system of: (1) individualized primary personal services (consisting of assessment, planning, treatment, and monitoring functions); and (2) environmental (or secondary) personal services (consisting of advocacy, support, linkage and networking), with support from (3) interface services (consisting of client identification and outreach, administrative activities, public relations, and education and training)".

According to this definition, services are designed to facilitate client competence and are dictated by the client's functioning level, case manager's skills and knowledge, and agency's policies.

The Social Work Dictionary (Barker, 2003) defines case management as: "A procedure to plan, seek, and monitor services from different social agencies and staff on behalf of a client." Case management is a highly individualized approach that considers the unique aspects of the person and at the same time provides a holistic orientation that views all aspects of the client system, including the client family, friends, their situation, and their environment. Case management, often referred to as care management, requires knowledge of community resources and entitlements, skills in matching clients with resources, linking of resources, and serving as an advocate. While there is no single definition of case management, the term generally encompasses the tasks of assessment, formulation of a case plan, coordination of the necessary services older clients need to remain living in the community, monitoring these services, and making adjustments to services when individuals' needs change."

Principles and Values of Case Management

A number of basic principles and values akin to Social Work Practice have been identified as integral to high quality case management systems in long-term care. These include the following :

- A consumer-centered service that respects consumers' rights, values, and preferences
- Coordinates all and any type of assistance to meet identified consumer needs
- Requires clinical skills and competencies
- Promotes the quality of services provided
- Strives to use resources efficiently (Geron and Chassler, 1995)
- Comprehensive model
- Addresses unique medical and social needs of the geriatric patient
- Involves consumers in care planning and decision making
- Provides appropriate access to specialty care when needed
- Recognizes the critical role of respite care services for informal care providers
- Prevents further disability by focusing proactively on ambulatory care
- Coordinates case management through an interdisciplinary team of professionals (including those with geriatric expertise), paraprofessionals, and family members or other caregivers
- Includes a full range of community-based services in the benefits package.

Roles and Tasks of Case Managers

Despite the diverse definitions of case management, there is surprising consensus on the tasks performed by case managers, and the roles that case managers play, even across client populations and settings.

Roles of Case Managers

Applebaum & Austin (1990) and Kodner (2001) identify ten potential roles for case managers:

- Broker and Arranger
- Coordinator
- Gatekeeper
- Evaluator
- Educator
- Counselor

- Monitor
- Mediator
- Advocate
- Problem Solver

The most common roles of a case manager in long-term care service delivery settings include that of broker/arranger, service coordinator, advocate, counselor, and gatekeeper

Service system roles involve optimizing the system's ability to respond effectively to client needs. As a broker or service coordinator, the case manager is responsible for identifying and arranging services. In these roles, the case manager's primary focus is on assuring that clients receive the services they need from other direct care providers; the case manager's contact with the client system may be quite limited. As gatekeeper, the case manager is concerned with containing costs and assuring appropriate utilization of resources, including ensuring that services are provided only to those clients who are appropriate for receiving them. Gate keeping is a key feature of the managed care model of case management. In the role of evaluator, the case manager is responsible for assuring that case management goals are met, whether client-oriented, administrative, or system-oriented. This typically involves assessment of process and outcome objectives as well as mechanisms for quality assurance and quality improvement. Client system roles involve helping clients to optimize their ability to make effective use of existing services in order to meet their needs and improve their well-being. As a counselor, for example, the case manager assists clients and their families with identifying and resolving personal and interpersonal barriers to obtaining care and meeting individual and family needs. As educator, the case manager may teach clients and family members skills needed to provide care, to arrange needed services, or to judge the quality of services, thus empowering them to assume as much responsibility as possible for their own care. The case manager may also work with the client system to monitor the care that is being received, whether from informal or formal sources. The case manager also may operate at the interface of formal and informal support systems. As problem solver, the case manager may respond to particular barriers to service access or utilization. As mediator, the case manager may work to facilitate problem resolution between the service and client

systems. As advocate, the case manager may intervene with the service delivery system to assure that clients receive appropriate, high quality services. The advocacy role is common to all major models of case management, although the case manager's level of authority as the client's advocate may vary among the models. For instance, when the case manager and service providers are independent providers, the case manager may have less authority than in a managed care model in which the case management services are offered through the same organizational auspice as the service providers.

How Case Management Works

Usually, one agency takes primary responsibility for a client and assigns a case manager, who coordinates services, advocates for the client, and who sometimes controls resources and purchases services for the client. Case management may involve monitoring the progress of a client whose needs require the services of several professionals, agencies, health care facilities, and human services programs. It typically involves client outreach and identification, comprehensive multidimensional assessment, and frequent reassessment. Case management can occur within a single, large organization or within a community program that coordinates services among agencies.

Goals and Functions

The primary goal of case management is to optimize client functioning by providing quality services in the most efficient and effective manner to individuals with multiple complex needs (Bellos & Ruffolo, 1995). Like all methods of social work practice, case management rests on a foundation of professional training, values, knowledge, theory, and skills that are utilized to attain goals that are established in conjunction with the client and her or his family. Social work case managers typically employ a social model of care. The National Association of Social Workers (1992) presents four processes that are emphasized by case managers who are trained from a social work perspective:

1. Enhancing the developmental, problem-solving, and coping capacities of people
2. Promoting the effective and humane operation of systems that provide resources and services to people

3. Linking people with systems that provide them with resources, services, and opportunities
4. Contributing to the development and improvement of social policies.

According to the NASW's information booklet for "Social Work Case Manager" and "Advanced Social Work Case Manager" certification (NASW, n.d.), social work case mangers perform the following core functions:

· Engagement: identification of, and outreach to, clients;
· Assessment: needs, functional, biopsychosocial, strengths, comprehensive intake, socio-cultural, and resource/financial assessments;
· Planning: intervention, treatment, care, rehabilitation, strategic, support, and crisis intervention;
· Implementation/Coordination: service brokering, monitoring service delivery, project implementation, and client support;
· Advocacy: systems improvement, client well being and functioning, liaison, and mediation;
· Reassessment/Evaluation: monitoring, efficacy, efficiency, data collection, and analysis;
· Disengagement: discharge planning, transfer, and termination.

The diverse and complex nature of providing services for an older population warrants comprehensive multidimensional assessments, coordination of care, and efforts to increase independence as much as possible (Scharlach, Simon, & Dal Santo, 2003). Not only are older clients faced with wide-ranging medical and care needs, but they are also dealing with concerns related to loss, grief, fear, and anxiety over loss of independence, and end of life (Sowers-Hoag, 1997). When working with this special population, issues such as housing options, family dynamics, health care, decision making, financial planning, competency, end of life, and quality of life need to be addressed. In case management with older persons, a clinical understanding is particularly important, because older clients tend to have multifaceted needs that put them at greater risk of abuse, neglect, and institutionalization. While there may be situations in which case mangers

simply link clients with resources, the real world of professional social work case management is much more complex.

Clinical skills, such as the development of the client-worker relationship, interviewing, assessment, and problem solving are all crucial elements in the development and implementation of an accurate and holistic care plan (Sowers-Hoag, 1997). These skills are also necessary to understand and deal with a client's ambivalence, fears, and resistance. Research suggests that experienced professionals, such as master's level social workers, are best at providing case management services. Workers in the aging services arena who lack professional training and skills may unknowingly overlook essential aspects of assessment and case management, such as client self-determination and other related ethical issues that could result in inadequate care (Scharlach, Simon, & Dal Santo, 2003).

Conclusion

Aging is a complex process, consisting of, and affected by, biological, psychological, and social factors. In the past, institutionalization was often seen as one of the most effective methods of providing continuous care for older persons (Morrow-Howell, 1992). However, the current trend towards aging in place has propelled the growing popularity of utilizing case management as a means for helping older persons to live independently in the community. The increasing emphasis on the use of case management in the social service and health care delivery system is an attempt to provide a strategy that will minimize the gaps in services and fragmentation in the provision of services to older adult clients (Sowers-Hoag, 1997).

Today, professionally trained social workers providing case management services are required in virtually every service setting, from NGOs, to hospitals, from Old age homes institutions to private practice. The expected rise in the number of older persons who will live in the community, along with continuing changes to the health care system, suggests that there is likely to be an even greater demand for professionally trained and credentialed social workers to provide and oversee case management services for older adults and their family caregivers.

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Stress and Anxiety in Elderly and Middle-Aged CHD Patients

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ABSTRACT

The extent of stress and anxiety (state and trait) was examined in elderly and middle-aged CHD patients. Matched controls consisting of normal persons were also included in the study. The primary objective was to ascertain the comparative account of stress and anxiety in both the age-groups of patients as well as the normal controls. Male patients who had at least one myocardial infarction or had recurrent infarction at least one year prior to the commencement of the study qualified as subjects. The study supports the following conclusions: (1) elderly CHD patients score higher on stress and state anxiety when compared with the normal controls as well as the middle-aged CHD patients; (2) elderly and middle-aged normal persons do not differ on the indices of stress and anxiety; (3) middle-aged CHD patients are more stressed than the middle-aged normal persons.

Key Words : Stress, State and trait anxiety, CHD, Myocardial infarction, Elderly, Geriatrics.

It stands fairly established that a large number of psychiatric and psychophysiological disorders are not solely biological in nature but involve a dynamic interaction of biological and diverse psychological factors. This stance is amply covered in the "diathesis stress model." "Diathesis" refers to the constitutional weakness that involves physical pathology, and "stress" to the psychological reaction to meaningful

events. According to this model, an individual develops a psychosomatic disorder when he has the physical vulnerability (diathesis) and experiences psychological disturbances (stress).

The most frequently observed clinical evidence indicates that emotional stimulus situation immediately antedates heart attacks. It has been suggested that various stressful conditions lead to emotional reactions that provoke coronary disease. Many types of reactions within the cardiovascular system normally occur after emotional stimulation. These include changes in cardiac rate, amplitude and regularity; blood vessel dilation and constriction; blood pressure changes; changes in corpuscle content; and changes in chemical composition of the blood (Lachman, 1984). The precipitation of myocardial infarction by psychological stress is well recognized (Friedman & Rosenman, 1974; Engel, 1976; Dimsdale, 1977); Kuller, 1978; Reich *et al.,* 1981). Similarly, anxiety is regarded as the central element in cardiac diseases (Thompson *et al.,* 1982, 1987; Eysenck, 1991; Winnicka, 1991).

The aim of the present study was to assess the extent of stress and anxiety in elderly and middle-aged CHD patients as well as to compare the scores of the two age-groups for stress and anxiety measures.

Materials and Methods

Subjects

Male subjects from two types of populations, CHD patients and normal persons, provided data for the present study. The sample consisting of CHD patients included 30 patients ranging in age between 48 and 58 years, and 30 patients whose age was 65 years or more. Only those patients who had at least one myocardial infarction or had recurrent infarction at least one year prior to the commencement of this study qualified as subjects in both the age groups. Moreover, all the patients had upper-middle socio-economic status and had education at least up to the first degree level. Sixty normal persons, 30 middle-aged (age-range: 48-58 years) and 30 elderly (age: 65 years or more) were selected as control groups after matching them on age, habitat, education and income with that of the CHD groups.

Tests

Stress. The Perceived Stress Scale – PSS (Cohen, Kamarck & Mermelstein, 1983) was used to determine perceived stress scores. The test measures the degree to which situations in one's life are appraised as stressful (Cohen *et al.,* 1983). This test consists of 14 items. Respondents are required to indicate for each statement on a 5-point scale ranging from 0 (never) to 4 (every often) as to how they have felt or thought in line with the statement during the previous month. The scores on the test range from 0 to 56; higher scores indicating greater amount of stress. This test has been used in a recent study (Gupta *et al.,* 2002).

State-Trait Anxiety. The Hindi version (Spielberger *et al.,* 1973) of the State-Trait Anxiety Inventory – STAI (Spielberger *et al.,* 1970) was used to determine scores on state and trait anxiety, each scale consists of 20 statements. Respondents are required to indicate for each item on a 4-point scale ranging from 1 (almost never) to 4 (almost always) as to how they generally feel (trait anxiety) or how they feel at the moment (state anxiety). The scores range between 20 and 80 on each scale; higher scores indicating higher levels of anxiety. The Hindi version of the STAI has been used extensively in India (Gupta, 1984; Sharma & Sharma, 1984; Gupta & Gupta, 1997, 2005, 2006; Gupta *et al.,* 2002).

Results and Discussion

The means and standard deviations for scores on the criterion measures (stress, state anxiety and trait anxiety) were computed in respect of elderly and middle-aged CHD patients and normal persons, and the significance of differences between means was evaluated by the t-test.

The results reported in Table 1 clearly demonstrate that the elderly CHD patients have significantly larger scores on stress and state anxiety than the middle-aged CHD patients; the results are in the similar direction for trait anxiety but are statistically nonsignificant.

Table 1. Comparison between Elderly and Middle-aged CHD Patients

Criterion measure	Elderly CHD patients		Middle-aged CHD patients		t-ratio
	Mean	SD	Mean	SD	
Stress	26.31	6.43	22.85	5.97	2.16*
State anxiety	47.42	7.86	42.16	7.53	2.65**
Trait anxiety	48.29	7.69	45.98	8.18	1.13

*$p < 0.05$; **$p < 0.02$

The results given in Table 2 indicate that the elderly and middle-aged normal persons do not statistically differ on stress, and state and trait anxiety. The elderly normal persons have larger scores on all the criterion measures than the middle-aged normal persons but the differences between the two groups do not reach the accepted level of significance.

Table 2. Comparison between Elderly and Middle-aged Normal Persons

Criterion measure	Elderly normal patients		Middle-aged normal patients		t-ratio
	Mean	SD	Mean	SD	
Stress	21.43	5.17	19.46	5.28	1.46
State anxiety	42.97	6.39	40.15	6.74	1.66
Trait anxiety	45.24	6.53	43.74	7.63	0.82

The table 3 reveals that the elderly CHD patients score significantly higher on stress and state anxiety than their counterparts, the elderly normal persons; differences for trait anxiety though in the similar direction are statistically nonsignificant.

Table 3. Comparison between CHD Patients and Normal Persons: Elderly Groups

Criterion measure	CHD patients		Normal patients		t-ratio
	Mean	SD	Mean	SD	
Stress	26.31	6.43	21.43	5.17	3.24***
State anxiety	47.42	7.86	42.97	6.39	2.41*
Trait anxiety	48.29	7.69	45.24	6.53	1.66

* $p < 0.05$; *** $p < 0.01$

Similarly, a comparison between middle-aged CHD patients and middle-aged normal persons (Table 4) indicates that the CHD patients experience significantly greater amount of stress than the normal persons; the patients have also higher levels of state and trait anxiety than their counterparts, i.e. the normal persons, but the differences are not statistically significant.

Table 4. Comparison between CHD Patients and Normal Persons: Middle-aged Groups

Criterion measure	CHD patients		Normal persons		t-ratio
	Mean	SD	Mean	SD	
Stress	22.85	5.97	19.46	5.28	2.33*
State anxiety	42.16	7.53	40.15	6.74	1.09
Trait anxiety	45.98	8.18	43.74	7.63	1.10

* $p < 0.05$

The results (Tables 1-4) make it quite clear that the elderly CHD patients live under more stress and have significantly higher level of state anxiety when compared with the middle-aged CHD patients as well as the elderly normal controls. Contrarily, the elderly normal persons do not significantly differ on any of the criterion measures when compared with the middle-aged normal persons. The elderly patients are under more stress and experience higher level of state anxiety because they are perhaps aware that the probability of developing

disease related complications increases with age and they are worried about their prospective look after and medication. Moreover, the elderly CHD patients may also find the routines of their cardiac care stressful and this might further weaken their capability to successfully combat with the disease. This speculation is consistent with the findings reported in a study (Winnicka, 1991) of patient attitude toward illness after myocardial infarction; the author reported such patients to be more anxious, stressed, depressed and pessimistic about their future.

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Dilema of Aged Prisoners

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ABSTRACT

The paper gives an overview of health conditions of the aged prisoners. 44 aged prisoners from the Central prison Sagar, in the state of Madhya Pradesh (because there is a separate aged home inside the prison) were interviewed individually. The age of the respondents was between 55 to 75 years. Most of the respondents were imprisoned for murder (86.36%). Health care system at various levels in the prison is designed for the general population and no special provision/preference is, so far, provided in the system to take care of the elderly. There are two main proposals that allow judges the option of granting medical release to aged prisoners and reinstate the possibility of parole for murderers serving life terms after they are released 60 years or more. There is also a question of criminal's debt to society. Some experts, and certainly victim's families are not convinced that age or infirmity should be a way to get - out of - jail. Indeed, Government of India has prepared a bill to protect and care for the aged. However, it is not clear whether the legislation has taken into consideration the aged in prisons.

Key Words: Aged Prisoners, Imprisonment, Prison, Criminals.

One of the world's greatest challenges of the present century is the enormous increase in the absolute numbers and proportions of older persons in the world. According to United Nations projections by the year 2050 the number of older person is expected to increase from 600 million to almost 2 billion. Presently, one out of every ten persons in the world is aged 60 and over. It is projected that by the year 2150 it will be one out of three (Ramamurti *et al.,* 2004).

Since a long time the phenomenon of ageing has attracted the attention of the scientists, social scientists, psychologists, criminologists and the common man alike. All persons, who live long enough, willy-nilly experience the effects of ageing. The changes, in body and mind seen in the later half of the life span are popularly referred to as ageing.

The changes due to ageing may vary from person to person. Some age fast and some age slowly. These changes are the result of several factors, mainly heredity, environment and life style.

Prisons are not designed to be comfortable and loving places as people are there to receive punishment. The only problem with locking people up are that (usually) this involves letting them out again. All prisoners must either die in prison or eventually be released. It is in the community's interest that released prisoners are not to re-offend.

Lots of work has been done on the aged those who are enjoying the society, but those who are languishing inside the prisons hardly invite attention. Nobody wants to reflect on them as they are criminals, they are prisoners.

The present study is an humble attempt to produce a piece of research, comprehensive, analytical and evaluative in nature. It wants to let the general public know what happens to a criminal when they become aged inside the prison.

Relevance and Scope of Study

The findings of the study will certainly help the planners and policy makers to develop new policies and prizonizatio in terms of the needs and release, rehabilitation of the elderly prisoners.

Coverage

Keeping in view the objectives of study, attention has been focused on the central jail Sagar, in the state of Madhya Pradesh. The selection of the institution has been made due to separate aged home inside the prison. At the time of study, 44 convicted male aged were there. Consequently, all aged prisoners (55+) were selected for the study. Five female aged prisoners were also there in a female cell, but due to lesser number they were excluded from the study.

Objectives of the Study:

* To know about the condition and problems of the aged.
* To know about any special facility provided for the aged.
* To study the socio-economic background of the aged prisoners.
* To study the governmental programmes provided in prison for the care of aged.
* To suggest ways and means to improve their living condition in Jails.

Data collection

For the collection of data researcher visited Central Jail in Sagar. An effort was made to come in direct personal touch with the aged prisoners. The data for the study was obtained through an Interview - Schedule. The schedule was also pre-tested, two months before. The collected data was analyzed and discussed.

Sample Characteristics

Some of the elderly (30) are from the backward cast and are largely from joint families. Majority of the elderly (42) belong to rural areas with low socio-economic status. Considering religious affiliation all elderly belonged to Hindu religion except one (Muslim). Their age range was 55 to 75 years. All were married and had spouses but only one was found widower. Nearly fifty percent respondents were illiterate. Literate respondents were found educated up to 8th standard. Before the punishment they were engaged in some occupation, such as cultivation (27), agriculture laborer (13), in petty business (2), service (2). The family income indicated that most of these elderly were living below the poverty line. About 6 respondents had their income between Rs.5000 to 10000 per month. Most of the members of the respondents were illiterate. The majority of the respondents were not indebted and some who were indebted borrowed from friends and relatives.

Nature of crime and sentence

Crime detection, arrest, conviction and imprisonment-all these sequential events combine to make for a traumatic experience. Such a trauma is likely to affect the course of their life and may have a direct bearing on their reformation and rehabilitation. Further it has often been

observed that correctional impact varies with the type of offence for which they have been imprisoned (Khan: 1990).

Table 1. Offences committed by the respondents

	Type of offence	Number
1.	Murder	38
2.	Attempt to Murder	2
3.	Harbouring offenders	1
4.	Sexual offence	2
5.	Kidnapping	1
	Total	**44**

(Note: data not from official records).

To re-construct the ocurrence of crime behavior is an uphill task (Vander: 1981) Crime detection, reporting and registration sometime may be lackadaisical. Moreover, the present study has proceeded on the basis of the information supplied by the respondents and this may not be complete or free from bias. While analyzing the nature of offences committed by the respondents (Table 1) it is found that 38 respondents were connected with murder. Rest of them were given sentence for attempt to murder, sexual offence harboring the offender, kidnapping. Hence, we found that majority of the respondents are alleged of murder charges.

Table 2. Confinement duration of the respondents

Duration of confinement	Number
5 Years	1
10 Years	3
Lifer	40
Total	**44**

(Note: Not from official records)

While making a study as to the period that respondent will have spend in the jail, it is found (Table 2) that only one respondent of them has been incarcerated for 5 years. 40 respondents were confined for life sentence or more than 10 years.

Health condition

Health in older persons is a product of life styles, effect of aging on body and environmental factors. Nutrition, access to health care, immunization body immediate attention to health problems, healthy life style, physical exercise and genetically endowed constitution determine health status at any stage of life (Jai Prakash, 2004).

Types of Impairment

Besides frequent illness, the aging process lead to certain disabilities such as vision defect, cataract and glaucoma etc. deafness resulting from nerve impairment, loss of mobility due to certain types of arthritis such as osteo arthritis, rheumatoid arthritis, gout etc., speech impairment and general infirmity.

Lack of health awareness among elderly, financial constraints, poor accessibility to health care services, and lack of medical facilities, un utilization of health facilities, illiteracy and poor hygienic conditions are major contributory factors for the poor health of elderly in India. Health of the elderly is a part of health care of general population (Raju, 2002).The same thing is also happening inside the prison. There is nothing special for the aged prisoners, but still they were any how satisfied with medical treatment during their illness.

Table 3. Types of the impairment of the respondents

Type of the Impairment	No. of respondents		
	Normal	Medium	Acute
Visual disability	20	17	7
Hearing disability	38	6	0
Speech disability	43	1	0
Locomotors disability	31	9	4

The data collected concerning disabilities among the elderly revealed that (Table 3) half of the elderly are affected by visual disability. Only one of the respondents suffered from mild speech disability. Only 6 respondents were affected by Hearing problem but no problem in making judgment. Many said that they did not need any help to move around. None of them used sticks to support themselves while moving.

Whatever medical services were available they made use of them. When required, they went to Government Hospitals outside the prison.

Ailments

Aging brings about wear and tear in physiological organs of the human body as a result of which the person becomes a victim to many types of diseases. Generally these are chronic and take a long period to cure (Menachery: 1987). Therefore in order to assess what type of diseases were common among the aged they were asked to specify those diseases from which they suffered. The diseases which were endorsed by a higher number of respondents were: general weakness, pain in joints, sleeplessness, digestive problems, blood pressure. Other complaints were also found but in a smaller number. It was also noticed that some of the aged prisoners had one or other illness and some of them reported a combination of ailments.

The jail has one kitchen, cooking is done by convicts (not by aged prisoners). Prisoners get two substantive meals which comprised of chapattis or rice one vegetable one pulse. In morning and evening they get tea and some breakfast. Data show that their food habits do not seem to meet their nutritional requirement fully. Milk, fruits were occasionally used, especially during their illness. Many experienced dental problem at this age. In Standard Minimum Rules for the Treatment of Prisoners, Adopted by the First United Nations Congress on the Prevention of Crime and the Treatment of Offenders, "The services of a qualified dental officer shall be available to every prisoner".

Interpersonal Relations:

The traumatic experiences through which inmates have undergone and the uncertainties they faced during the early days in the jail may accentuate gregariousness and bring them closer (Khan: 1989). We found that (Table: 4) the inmates always helped each other during crisis.

None was found to be helpless or not getting any help during their illness.

Table 4. Response of the respondents to the statement in the time of illness do you think that the other inmates help you?'

	Never	Sometimes	Always	Total
Frequency	0	4	40	44

Case Studies : India & Abroad

60 year-old prisoner dies in custody

Sholpa Dawa, a 60-year old tailor from Lhasa City died at 7.00 in the morning on 19 November 2000. He was reportedly taken to a hospital outside Drapchi Prison complex just few days before his death, indicating that he required medical attention. The exact cause of his death is not known. Sholpa worked as a construction laborer and later became a private tailor until he was first arrested on 29 September 1981 for allegedly distributing pamphlets on Tibetan independence. He was sentenced to two years' imprisonment and one-year deprivation of political rights of which he spent six months in Gutsa Detention Centre and one and a half years in Sangyip Prison (www.tchrd.org).

71 year old Gitmo detainee released

SAN JUAN, Puerto Rico - The oldest detainee at Guantanamo Bay — an Afghan who was at least 71 and hobbled around the U.S. prison in Cuba using a walker — was sent home, his lawyer said Monday (www.news.yahoo.com).

72 year old prisoner starved to death

An investigation is underway in California into the death of Khem Singh, a 72 year- old crippled, Sikh priest from India who died of starvation after being brutalized by a prison guard, Mr. Singh would not leave his cell for meals or medical visits. Fellow inmates wrote letters and filed complaints about his condition and officials did nothing. His weight dropped to 80 pounds. Now, he is dead (www.talkleft.com).

Prisoner dies at U.S. military facility in Iraq

BAGHDAD — a 67-year-old prisoner died at a U.S. military facility on Friday morning, U.S. officials said Saturday. The man was "pronounced dead by the attending physician at the 344th Corps Support Hospital at 7:30 a.m.," according to a military (www.stripes.com).

China Releases Tibetan Prisoner

I welcome China's decision to release 76-year old Tibetan prisoner Tanak Jigme Sangpo. Jigme Sangpo, a former school teacher, was released on medical grounds last week. Jigme Sangpo, one of China's longest-serving political prisoners, has spent a total of 32 years in prison since 1965 (www.foreignminister.com).

A Question of Justice

Robert Hudson walks slowly now, one large hand wrapped around a cane for support. He looks older than his 64 years after recent quadruple-bypass surgery — he looks older too, perhaps, from three decades spent in prison. Nearly 30 years ago, he was convicted for what would be the last in a series of crimes, the murder of a gun-and-coin-shop proprietor in Blue Island, Ill., during the course of a botched robbery with two accomplices. (www.chronicle.uchicago.edu).

The Price of Punishment

California's prisoners is aging and taxpayers are paying for their medical care. As costs and inmate populations rise, the debate over keeping elderly, infirm convicts locked up grows louder

Clyde Hoffman, 81, doesn't miss an opportunity to talk to a visitor in his room at the California Medical Facility in Vacaville. Hoffman, who has lung cancer and heart disease, is serving time for killing his girlfriend He's serving a 20-year sentence for second-degree murder and for the past two years he has waited for death.

Jamie Gonzalo, 60, had both legs amputated below the knee because diabetes restricted his blood flow. He was incarcerated four decades ago for car theft and then earned a life term for killing another inmate. He is imprisoned at the California Medical Facility in Vacaville

Ray Allen, a 76-year-old murderer who had been kept alive only to die from a lethal injection Jan. 17. He had been revived after a nearly

fatal heart attack in September and was also treated for diabetes, which caused partial blindness (www.recordnet.com).

Robert York is old, sick angry and innocent !

Robert York is now nearly 86 years old and his health is getting worse. He is living in Union CI with the other elderly prisoners. An FDOC nurse once described the elderly section of Union as “the saddest place I’ve ever seen. All these old guys with Alzheimer and senility roaming around not aware of where they are. Some of the officers take great pleasure in writing them up and putting them in confinement for being out of their area” (www.angelfire.com).

Inmates sue prison for aged, infirm
(Complain of crowding, lack of medical care)

A group of inmates at the state’s Aged and Infirmed Unit at Hamilton have sued the state over medical care and crowded conditions at the prison for men with severe illnesses and chronic medical problems. (www.schr.org).

Aged inmates’ came puts stress on state

Inmates like Gene Garrett can’t be denied medical care for the chronic ailments that are a natural part of growing old. Garrett is 74 years old,

Arthritic and on crutches. Eight months ago, he had a heart attack, and Doctors put a stent in his heart. He takes 18 pills a day (www.azcentral.com).

Conclusions

In prison we have known directly the intolerable suffering of prisoners and the struggle of the relatives. The prisoner lives in the expectation of the end of the sentence. Elderly and young people find themselves branded by the mark of criminal that is difficult to erase.

People behind bars in India grow grayer each years. As this trend builds momentum, so does the debate both inside the world of corrections and among lawmakers and academicians about whether the country should continue to keep so many of its old prisoners locked up. The cost of taking care of them is high and climbing. We need to use some

common sense. How much punishment is enough? It is clear that we had a growing geriatric population in our prisons at a growing expense. But still need recommendations that the state set up a system to release some old prisoners through the courts or the parole system. Studies have shown that recidivism drops significantly with age.

There are two main proposals: 1. Allow judges the option of granting medical release. 2. Reinstate the possibility of parole for murders serving life terms. The last has been a point of contention.

In practical terms the biggest problem with housing older inmates is that they need a lot of medical care. Yet releasing prisoners in their final years is a much more complicated issue than it may seem. For example who will pay for their case on the outside the prison and how much will it cost? Inmates who are released to family obviously have to spend savings. About three quarter of geriatric inmates don’t have families who can take them in or resources to pay for their care.

There is also the question of a criminal’s debt to society. Some experts and certainly victims, victim’s families aren’t convinced that age or infirmity or both should be used to get–out–of–prison. While this debate is on, life of older behind bars has never been better. Very often in a general prison population the geriatric inmate becomes a victim. Adding to the above moral is the fact that medical care in prisons is generally good, often better than on the outside because courts (law) have forced states to provide it on constitutional grounds. Some prisons, in particular, are known for exceptional care including such higher- cost procedures as open- heart surgery.

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Life Satisfaction and Its Correlates Among Aging Adults

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ABSTRACT

The Indian aged population is currently the second largest in world. Aging is a universal phenomenon, it is not a uniform experience among aging adults. Some persons achieve a sense of fulfillment and satisfaction in their old age, while others turn bitter and lament the decline of their physical abilities and social significance. Life satisfaction among the aged is an important concept, as it has far reaching implications and it can give us an over all view of the larger populations ageing successfully or not in our society. Some influencing factors of successful aging are health status, marital status, socio-economic status and age. The paper discusses the various factors as marital status, socio-economic, age, gender and social supports in affecting the quality of life and life satisfaction among the aged in India..

Key words : Life Satisfaction, Successful aging, Marital status, Socio-economic status, Health status, Social network

India is going through a revolution in its demographic economic, socio-cultural and phsychological status. The population aged 60+ is increasing rapidly in the country. According to estimates by United Nations the projected population of India will be 1,445.6 million in 2025. This will be about 17.1 percent of the total world population at that time

(Sidhu and Bargoti, 2003). The population of elderly in India in the year 2021 will be 137 millon (Begda and Kanthoria, 2006). India with its horary philosophical traditional and cultural practices of respect for old age may reveal a totally different set of constituents that contribution to a happy aging. Happy aging is characterized by satisfaction with ones present life and psychological state of happiness and content with existing condition (Ramamurti and Jamuna, 1993). Life satisfaction among the aged is an important concept as it has for reaching implications and it can give us over all view as to how much different an individual is, or how the person is aging successfully (Chandha, Mangla and Aggarwal 1992).

Life satisfaction, often refers to the attitudes that individuals have about their past, present and future (Chadha and Willigen, 1995).Ho, Woo & Lau (1995) have suggested that the most important factor which contributes to life satisfaction are health, adequate income to meet living expenses, good social support, participation in social activities and low depressive symptom score.

Marital Status and Inter familial life

Researches suggested that married older people were high on life satisfaction as compared to their widow/widower counterparts. It was also highlighted that married aged scored higher on positive self concept and life satisfaction as compared to their widow counterparts. According to Cavien (1949) married older people were more satisfied with their life than unmarried older people. Marital status makes differences to living arrangement in old age and helps in successful aging while having children did not show significant impact (Mishra, 2003).

Fingler, Danigelis and Grams (1983) studies suggested that aged living with others had a greater degree of incapacity and lower income than married couples, but on most indices there were few differences. Elders in three generation families had some what lower life satisfaction but the greatest number of elderly people with low life satisfaction were the widows who lived alone and there income was inadequate and prospects indicated low for emergency fare.

In a study Vijayshree (1988) investigated life satisfaction, depression, loneliness and death anxiety among family based and non-family based aged subjects. The results showed that the family based

aged have proved to be the most satisfied psychologically and socially as their life satisfaction scores stood significantly higher than those of others. Hawley and Klaukev (1988) explored the associations between social support, health practices and life satisfaction. Analysis showed that subjects having better inter personal relationship and engaged in more healthful practices have a greater level of life satisfaction. Low companionship of spouse correlated with lower level of life satisfaction in companionship to high concentration of spouse group (Das and Satsangi, 2007).

Gee (2000) examined the role of living arrangements in quality of life in community dwelling elders. 830 persons were interviewed on three dimensions of quality of life which were satisfaction, well being and social support in three types of groups who were living alone; with spouse and in intergeneration families. Findings highlighted that in widows especially females; the quality of life went down significantly with decreasing support.

Gender and Age

Gender significantly affects the satisfaction on the domains determining quality of life (Jain and Sharma, 2004). In a study conducted by (Chadha, 1991); the results highlighted that the level of satisfaction was significantly different in two genders. It was observed that men were more satisfied from life then their women counter parts (Gaur and Kaur, 2001). Similarly, in another study there were significant gender difference on the level of life satisfaction and general adjustment. Women were less satisfied with life as compared to men (Subrahamanian, 1990). Sharma and Chadha (2006) also concluded the same results.

However a study by Jain and Sharma (2004) suggested that females have greater level of life satisfaction as compare to males. Mishra and Dhawan (2007) attempted to look at the life satisfaction among elderly males and females. A sample of 60 (30 male and 30 female) between 65 to 75 years of age participated in the study. Results showed gender differences on over all life satisfaction among elderly. The study reported that women were higher on life satisfaction than men.

In a study Ramamurthi (1970) measured life satisfaction in later years. Two scales of life satisfaction (Neugarten, Havighurst and Tobin,

1961) were administered to 250 aged people in Madras city. The study indicated that there was an initial sharp decline in life satisfaction in the early 50's; a second decline beyond the 61st year and an improvement in the intermediate interval. In the earlier part it is physical and psychological effects of aging; and later decline may be attributed to retirement.

The comparison of age categories of young old (60-69 years) and old (70-79 years) on life satisfaction indicated no significant difference among these groups. But when the age categories of young old (60-69 years) and old-old (80 years and over) were compared on the life satisfaction scale, the results yielded significant differences on the level of life satisfaction. Young old elderly people were significantly higher on the level of life satisfaction when compared with old-old categories of elderly (Sharma and Chadha, 2006). However, Edward and Klemmack (1973) reported that the relationship between age and life satisfaction was found to be statistically significant level when socio-economic status was held constant.

Health, Social support and Scoio-Economic Status

Edward and Klemmack (1973) examined the effect of a wide range of variables on the level of life satisfaction of middle aged and elderly persons. The results indicated that the primary determinants of life satisfaction were socio-economic status, particularly family income and non-familial participation, particularly neighbouring. Perceived health status is also related to life satisfaction. They further suggested that activity in general does not contribute to life satisfaction but only certain types of activity have such an effect.

Sharma's (1971) study examined a sample of 44 retired people living in urban setting and found that happiness in old age depends on busy life, good health, absence of feeling of paucity of funds, having a spouse and social contacts. Some other studies (Jamuna 1984; Ramamurthi, 1978, 1989) brought out the fact that economic status is an important factor in influencing the level of life satisfaction in aging people. It is true that money provide a sense of security, particularly for the aged.

Asakawa, Koyano and Takatoshi (2000) examined the effects of declining functional status on social networks, life satisfaction and depression. Results showed that social network, life satisfaction and depression were significantly affected when functional health status changed. It is an important prerequisite for higher quality of life in old age. A model specifying the causal links between physical, functional and subjective component of physical health status and life satisfaction in 231 aged females (56-95 years) were examined by Lohr (1988). The results showed that the declining physical condition directly contributed to functional impairment and lowered the life satisfaction. The positive cognition buffers the effect of physical conditions and passive cognition has deleterious effects on health status.

Prakash (1998) studied the urban and rural elderly on their quality of life. It was reported that health is considered as a resource that makes quality of life possible and enhances life satisfaction. Urban elderly males had greater sense of well being than females. Urban females have lowest well being score indicating distress. Shyam, Yadav *et al.* (2000) examined a sample of 60 elderly in which 30 were institutionalized and 30 were non institutionalized. They were administered a well being measure, health questionnaire and a social support questionnaire. The non-institutionalized subjects reported significantly high on depression; and life satisfaction was high in institutionalized subjects.

A comparative study conducted by Dickie (1979) on 30 institutionalized and 32 non-institutionalized elderly on the variables of the life satisfaction and activity level reported no differences between the two groups on life satisfaction. Self reported health status was related to life satisfaction. The health variables differentiated the satisfaction levels among the institutionalized subjects.

Chadha and Nagpal (1991) conducted a study to find out differences, if any between institutionalized and non-institutionalized subjects with respect to social support network and life satisfaction. The results of the study indicated :

- Social network size of institutionalized group was significantly smaller that their non-institutionalized counterparts.

- Non-institutionalized elderly had higher life satisfaction as compared to the institutionalized, counterparts.
- Social support and life satisfaction were significantly related to each other; males being significantly higher than females.

Conclusion

Life satisfaction has been perceived as the attitudes the individuals have about their past, present and future. The review shows this to be correlated with marital status, social supports, socio-economic status, gender and health status. It has been reported that individuals living with financial security seem to enjoy a better quality of life. Living alone, being widow/widower and inadequate income during aging years are the contributors of low level of life satisfaction. Researches reported significant gender differences in the level of life satisfaction of elderly. More number of research studies suggest men to have higher level of life satisfaction as compared to women; however few studies also report women to indicate a higher level of life satisfaction.

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The Significance of MMSE Scores in Forgetfulness

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ABSTRACT

Forgetfulness is one of the commonest symptoms in elderly psychiatric patients. This study aimed at studying the symptom of forgetfulness in 200 elderly out patients that visited a private psychiatric clinic in Mumbai. The patients were screened for medical and psychiatric disease. The patients were then administered the Mini Mental Status Examination (MMSE) and the scores on various subscales were analysed to try and find specific markers of forgetfulness in the elderly. The results though concise and clear are presented in the study.

Key words : Forgetfulness, Elderly, MMSE

Forgetfulness is one of the most prevalent symptoms noted by doctors worldwide. It is often seen as a part of both dementia and depression. In dementia it the start of various memory disturbances to follow while in depression it is a part of the symptom cluster that comprises of depressive pseudo-dementia. It is important to note that there may be medical disorders like hypertension and diabetes with forgetfulness being an integral part of their symptomatology (Gold & Charney, 2002).

Apart from being pathological forgetfulness may also be a part of normal aging that is termed as age associated cognitive decline (American Psychiatric Association, 1994). These patients may however progress to dementia at a later stage. Forgetfulness turns pathological

when it starts interfering with day to day functioning. It has been recently recognized that forgetfulness is a symptom seen in 50-60 cases of subthreshold geriatric depression (Sherbourne *et al.,* 1994). It has been shown in a recent study that patients with both dementia and depression are equally prone to forgetfulness (Lee *et al.,* 2003). In a study that assessed therapeutic compliance for hypertension, it was noted among those taking medication irregularly or missing doses, 65 per cent patients stated forgetfulness as a cause (Gil *et al.,* 1993). Anti hypertensive drugs also effects memory functions (Richardson *et al.,*1988).

By the year 2020, the number of aged people over the age of 65 years worldwide would have doubled and that above the age of 80 years would have trebled. In India itself, 6 per cent of the population is above the age of 65 years and this figure shall reach 12-25 per cent by 2025 (Channabasavanna, 1987). There have been large scale community studies on geriatric psychiatric morbidity in India but none that have focused on MMSE and its significance in patients with forgetfulness alone (Ramachandran *et al.,* 1979).

The aim of the present study was to estimate the significance of total MMSE scores along with score on various subscales of the MMSE in geriatric outpatients with forgetfulness.

Material and Methods

The first 200 elderly patients (age > 65 years) seen in a psychiatric clinic were screened for the symptom of forgetfulness by direct questioning. Their sociodemographic data was noted and they were screened for the presence of a psychiatric disorder if present using the DSM-IV criteria of the American Psychiatric Association (APA, 1994). Those that complained of forgetfulness were assessed using the Folstein Mini Mental Status Examination (MMSE) by a psychiatrist and the scores were noted (Folstein, Folstein & McCugh, 1975). The study aimed at quantifying forgetfulness using the MMSE and studied the individual components of the MMSE. The data was statistically analyzed using standard error of proportions, Chi square test and Fischer's exact test for comparison of proportions with the help of probability tables ($p < 0.05$ being significant).

Results and Discussion

The sociodemographic data revealed an equal number of males and females in the study. The groups were well matched in all respects.

The cumulative frequency of forgetfulness in the study was 65.5 per cent (131 / 200) on baseline screening. Though acknowledged by many as a symptom it may be implicated more as psychopathology and at times as even normal aging. 52.67 per cent had impaired MMSE scores (69 / 131). Among the various groups, all 6 dementia patients had an impaired MMSE score. 2 out of these had severe impairment. All the clinical categories showed mild to moderate impairment on the MMSE. Medical disorders or major depression alone had given rise to moderate impairment but a combination of the two increased the severity of impairment (Table 1). It was interesting to note that 12 patients that had no psychiatric or medical diagnosis showed mild impairment on the MMSE. They are under close monitoring to detect progressive cognitive decline and it is likely that they may be preclinical states of dementia. All the categories that had impairment on MMSE were statistically significant when compared to patients that had normal MMSE scores (table 1).

Table 1. MMSE in the Forgetful Elderly

CLINICAL CATEGORY	FORGET FULNESS (N = 131)	MMSE IMPAIRED (N = 69)	MMSE NORMAL (N = 62)	IMPAIRED MMSE MEAN SCORE	NORMAL MMSE MEAN SCORE
MAJOR DEPRESSION	32	11	21	19.78 ($p < 0.005$)	28.98
DEPRESSION +MEDICAL DISORDER	38	26	12	17.5 ($p < 0.001$)	28.56
MEDICAL DISORDER ALONE	43	20	23	18.56 ($p < 0.002$)	29.5
NO DIAGNOSIS	12	6	6	21.22	30
DEMENTIA	06	6	0	17.5	-

In a study of geriatric patients it has been proved that diabetes, hypertension and ischemic heart disease may cognitive impairment in elders. It is well known that antihypertensive drugs cause forgetfulness (Richardson & Wykes, 1988). It has been noted in studies that individuals with diabetes are more prone to forgetfulness due to periods of hypoglycemia and chronic neuroglycopenia in the brain (Ryan & Geckle, 2000). Stroke can also be a forerunner for cognitive impairments that may develop and persist for a very long time with very little recovery.

When assessing the various sub scales of the MMSE, it was noted that the major areas of significant impairments were recall, calculation and draw a figure in ascending order in all the categories (Table 2). These sub scales may almost represent specific clinical markers for forgetfulness.

Table 2. Details of the Areas of Impairment on the MMSE Subscales in MMSE Impaired Subjects

DIAGNOSIS	ORIENT. (10)	REGIS. (3)	CALC. (5)	REC. (3)	LANG. (8)	DRAW (1)
MAJOR DEPRESSION	9.6	2.9	2.8	1.8	6.6	0.3
DEPRESSION +MEDICAL DISORDER	8.9	2.8	2.9	1.3	7.2	0.5
MEDICAL DISORDER ALONE	9.3	3	3.1	1.3	6.9	0.3
DEMENTIA	8	2.8	2.2	1	5	0
NO DIAGNOSIS	9	2.9	3.0	1.6	6.9	0.2

With great emphasis on neurobiological studies it is known that the temporal lobes in depressed subjects are smaller than the normal population. It is also of interest to note that SPECT studies have proven that there is decreased blood flow to the bilateral parietal and occipital along with the dominant temporal lobes at rest and during cognitive tasks in depressed subjects (Bonne *et al.,* 2003). This correlates with the impairments on tasks such as recall and drawing seen in our MMSE analysis.

Conclusions

Forgetfulness is a common clinical symptom in geriatric patients and needs active and directive evaluation by all medical personnel. It may represent presence of a medical as well as psychiatric disease and especially geriatric depression. The severity of forgetfulness and age associated cognitive decline increases when there is a combination of medical disease and depression. Intervention strategies are needed to consider the presence of medical disorders in geriatric depression and the presence of depression in patients with medical disorders in old age.

Besides medical disorders like stroke, hypertension and diabetes pose a risk for forgetfulness as well as cognitive decline. Geriatric depression is a forerunner for dementia and must be followed up over time for the emergence of cognitive decline. These patients will be followed up over time to correlate the same.

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BOOK REVIEW

Lessons on Aging From Three Nations, *Edited by Sara Carmel , Carol A. Morse and Fernando M. Torres-Gil, with Coeditors: JoAnn Damron-Rodriguez, Susan Feldman and Terence Seedsman. Published by Baywood Publishing Company, Inc., Amityville, New York, 2007. Vol. 1, 220 p.; Vol. 2, 230 p.*

The book has been published in two volumes: Volume 1 devoted to The Art of Aging Well and volume 2 to *The Art of Caring for Older Adults*. Volume 1 has 13 chapters, divided in three sections: The art of coping with growing older (5 chapters), The art of adapting to health challenges with age (3 chapters), and The art of making a place for older persons in society (5 chapters). Volume 2 also has 13 chapters, divided into three sections: The art of Care giving: Policies and services (4 chapters), the art of family care (3 chapters), and the art of letting go (6 chapters). Each volume has an introductory chapter, and epilogue and glossary.

With increasing longevity and reduced morbidity the number of aged in the different societies are increasing. With increasing number of nuclear families, and the busy life styles, the problems of caring of the aged are multiplying even in the developing countries. Although the two volumes discuss such problems only for thee countries (USA, Israel and Australia), the discussions and models suggested are relevant in relation to other countries also.

The first volume reports the successful aspects of aging in the three developed countries (United States, Israel, and Australia). Each of them has rich infrastructure of programmes and services for older people. The developed nations have the resources and capacities to respond to the demands, pressures, and needs of their aging societies. The third-world nations (e.g., in Asia, Africa, South America erstwhile Soviet republics), are also aging, but because of their poverty are unable to finance, create, and maintain social, economic, and professional infrastructure of programmes, benefits, and services.

However, in spite of their affluence, neither the United States, Israel, nor Australia has fully responded to their elderly, as witnessed by the gaps between subgroups of older persons (e.g., Aborigines in Australia, Blacks in the United States, and Bedouins in Israel). Each is facing the pressing costs of health and long-term care. Families struggle with the burdens of care giving. Yet, the strengths of these countries is the fact that they benefit from a sophisticated educational, research, and professional cadre of gerontology and geriatric expertise.

The chapters in the first volume address many topics, each examining the aspects of longevity that highlight how these nations are proactively addressing the challenges of aging. Each chapter also offers a significant contribution to the Gerontological literature. Examining these contributions from a broader perspective raises a host of potential lessons for addressing global aging. The United States is a world power with hegemony of military, economic, and cultural influence. Israel, a small and relatively new nation, struggles to promote its religious and secular ideals in an unsettled part of the world. Australia is a large land mass with a small population. All these countries are grappling with aging and multiculturalism. Few other nations in the world, particularly those that are underdeveloped and emerging countries, will be quite like any of these three. Nonetheless, useful lessons and themes emerge from their “cross-national commonalities” and shared experiences, and this can lead to further research and policy analysis in other locations.

These nations can provide some potential generalizations to other regions of the world and demonstrate successful approaches to aging. We need to be aware of the impact of longevity, increased life expectancy, and “liberation” from the vicissitudes of old age. With a few possible exceptions (e.g., Russia and some African nations), the world is growing older, and individuals can expect to live longer than those of previous generations. This demographic reality, and unquestionable human success, will eventually require a response from all nations. We can learn from how the United States, Israel, and Australia are grappling with it today. Nations, particularly those countries with a low median age, can choose to ignore for the moment the forces of longevity, but inevitably they too must respond to the needs of older

persons and their families. "One potential way to respond to this commonality may be to assume the possibility of living to 100 years of age and thus work backwards in formulating personal, public, and private sector responses."

Longevity causes some change and social trends that will alter the demo- graphic profile of nations. The various chapters in this book amply describe many of those changes, such as family structures. No longer can we assume the prevalence of extended families and kinship supports; nor can we assume in developed nations that nuclear families will prevail. In addition, gender differentials in life expectancy mean that women will increasingly become widows. This may not necessarily mean they have to live alone. We may find new arrangements of individuals (e.g., communal housing, same-sex couples, shared living). At the same time, as pointed out in one chapter, families may be smaller due to declining fertility rates, but we will see more generations within families—as many as four or five. While multi-generational families provide opportunities for kinship ties, children may be more geographically removed as they seek economic and professional opportunities; and elders, particularly those in rural areas, may have to fend for themselves, as is happening today in Kerala. The family structures will undergo changes, and we must pay close attention to the various forms families might take and figure out how to adjust for differences in the availability of family support and living arrangements.

One crucial question is: How do we ensure a quality of life and the formal and informal support services that make it possible for an individual to live longer, regardless of family availability, and with a measure of independence, control and dignity? Many of the chapters offer potential answer to these questions. Foremost is the importance of a support system. In the larger context of life, as pointed out in one chapter by Martinez, Wallace, and Litwin, the interpersonal milieu of older adults can make the difference in the quality of life at their old age. With longevity and changes in family size and availability, that support system is composed of more than family; it can include friends, neighbors, relatives, professionals, and service providers, among others. Avoiding loneliness and knowing someone is available to help are key

benefits of a support system that contributes to well-being in later life, regardless of region, income, health, and culture.

Alongside quality of life is the notion of "community," the attachments older persons have to the immediate world around them, and relationships with others, particularly those of other ages, or in Seedsman's words, "intergenerational solidarity." A basic premise of this book is the preference for age-integrated approaches to services and community-the idea that young, middle-aged, and older people can and should have interactions with other age groups throughout their life cycles. Preserving intergenerational opportunities is not foreign to most ethnic cultures, but it may be difficult to maintain in nations such as the United States, which base their public benefits on age-based eligibility. Aging in place and the availability of residential and community-based housing, long-term care, and health programmes go counter to what some nations, notably the United States and to a lesser extent Australia, are witnessing. In those countries the desires of older adults to stay in their homes and live in their communities, regardless of the extent of physical limitations and chronic illnesses, in a way is denied by the prevalence of institutional facilities, namely hospitals and nursing homes,

Certainly, health status is a defining concern for persons as they grow older, and the chapters in this book amply clarify this challenge. The good news, across these three countries, is that individuals are living longer, healthier, and with fewer disabilities until very old age.

Volume 2 examines policies, services, and interventions that enable families and caregivers to care for their own. This volume explores how the three countries address the manpower needs for health and social-service professionals in gerontology and geriatrics, as well as the clinical and programmatic interventions that best serve those elders with dementias, and chronic and terminal illnesses. It explores care giving and long-term care policies, the needs of families, and death and dying. Whereas Volume I of this series examined The Art of Aging Well and the successful examples of how these three nations respond to the various needs of older and diverse populations, volume 2 delves into an issue of the end of life.

The increase in the proportion and number of elderly and the inevitable health-related challenges will ultimately affect the oldest old. That in turn means that health-care costs and the attendant expenditures for medical and long-term care will strain governmental budgets and private sector medical care. Yet, these nations are fortunate to have a level of basic medical care from which to reform and address unmet health and long-term care. The mental health needs of older populations with declines in' cognitive ability (e.g., dementias) add to the complexity of health-care solutions. Unique health-related questions facing aging immigrants have been raised in this volume for the three countries, particularly for those who relocate to their adopted countries as older adults and face the physical, emotional, and mental health pressures of adjusting to new societies. However, immigrants, particularly first generation, have a resilient ambition and energy that add vitality to these three nations and to their communities.

One successful aspect of adapting to health challenges is the Darnron-Rodriguez and Lubben concept of community care for older persons and a community-based health-care system that integrates social health care with traditional medical models of health-care delivery. Such a system seeks to avoid over reliance on nursing homes and institutional models while taking advantage of formalized health care located close to the family and within the community of the older adult.

A complicating factor that permeates this book is the influence of diversity and immigration on all aspects of aging in the three countries. These three nations have histories of allowing and even welcoming immigrants and refugee groups from throughout the world. Each country addresses the political aspects of this policy differently, and each has been forced to confront the tensions, conflicts, and contradictory aspects of its growing multiculturalism Regardless of the ambiguity each faces, all three find themselves benefiting from the energy, higher fertility rates, and ambitions of their minority, immigrant, religious, and refugee groups. Unlike nations such as Japan, Korea, and countries of Europe and the Mediterranean that continue to impede immigration and, with declining fertility rates, find that they are aging quickly as a society, the

United States, Israel, and Australia remain relatively younger and economically vibrant because of diversity and immigration. Nonetheless, when viewed through the prism of demographic changes, there are issues that arise from the nexus of aging and diversity.

An issue facing diverse populations and all elders is the universal reality of ageism and civil rights. Seedsman highlights the pervasive power of stereotypes and the marginalizing aspects of ageism, and discusses the impact of ageist attitudes on the elderly, while proposing the need to promote intergenerational solidarity between all ages. This aspect of discrimination against the elderly is recognized in these three nations while other parts of the globe supposedly revere their elders and give them an honored role in the family and society. India, China, Japan, South America, Mexico, and other traditional societies are viewed as more respectful of their elders and less likely to practice ageism and have discriminatory attitudes toward their elders. One must wonder if this is really the case. These countries also face the prospect of ageism as their elders grow in number and are seen as a burden to their societies. What "core values" should all nations promote to their aging societies? It is worth reflecting, what faces these three countries face have some lessons for developing countries.

Although the lessons from these three nations have limitations and with country-specific foci, these investigations suggest a set of themes and principles by which other nations can understand their own demographic realities. Hopefully all nations will see their aging as a set of opportunities and act on the benefits of an aging society while they address the problems facing older persons and their families. As these volumes suggest, we must acknowledge the revolutionary achievement of human-kind: the ability to live a long life and reach that milestone of 100 years of age. Never before has any nation-or the world-faced the real possibility that the life span can be extended and that a commensurate quality of life can accompany that longevity. The improved health of older persons and their ability to be productive and energetic in old age offers huge untapped resources for all nations.

The main basis of a nation's ability to respond to the demands of aging is the role of various sectors of society and "the interface of family and state responsibility" in developing partnerships for meeting the needs and opportunities of their aging society. The three nations discussed in these volumes have highly developed sectors of government, nonprofit, and nongovernmental agencies, as well as for-profit and private sector entities. Their public sector provides a host of benefits, funding, and resources, including well-developed formal and administrative systems of programmes, agencies, and services for the elderly and their families. Their corporate and business sectors are delving into the consumer potential of older populations in terms of investments, asset and wealth management, long-term care insurance, inheritance, and other areas. Religious and charitable organizations play a major role in all three nations. Yet, each nation is currently reassessing the proper balance for each sector's role in confronting aging, for example, the efforts to privatize the United States' Social Security system. The extent to which other countries have or do not have this elaborate infrastructure of public, private, religious, community-based, and nonprofit approaches to aging will determine their ability or inability to respond to the rapid aging of their populations. No one entity can adequately respond fully to the increased demands of older persons and their families. Continuing to rely on informal support systems will be necessary, but establishing and expanding the role of the private and public sectors of society including voluntarism will be crucial.

These two volumes have convincingly addressed the challenge of understanding the art of aging in a global community. They have highlighted the need to expand research and enrich policy and practice in this area. These chapters will hopefully stimulate exploration of new paradigms, policies, and action-priorities in the important emerging aspects of gerontology.

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Mental Health Issues of Older Women : a Comprehensive Review for Health Care Professionals - *Edited by Victor J. Malatesta, Ph.D. The Haworth Press, Inc. 10 Alice street, Binghamton, NY*

This is an edited book. It comprises of 11 chapters or articles and Conclusion, totaling 196 pages. The chapters (Introduction : The Need to Address Older Women's Mental Health, Cognitive Functioning and Ageing in Women, Women, Aging and Alcohol use Disorders, Women, Aging and Schizophrenia, Major Depressive Disorder in the Older Adults : Implications for Women, Anxiety Disorders and Older Women, Posttraumatic Stress Disorder and Older Women, The Older Female Patient with a Complex Chronic Dissociative Disorder, Sexual Problems, Women and Aging: An Overview, Eating Disorders Across the Life Span, Borderline Personality Disorder Across the Life Span) are really the articles also published in Journal of Women and Aging. The good thing for academics is that each article contains the e-mail address of the author.

The Editor, Victor J. Malatesta, Ph.D., on page 10 declares what the readers can expect from this book. The general readers can get an initial idea and also the leads on resources that they can track down to get deeper information/understanding. The professionals in the field – it is hoped—will find the information stimulating, confirmatory of their experience to sharpen their skills' edges and identify the areas of need and future research. I find this book coming up to the editor's declared hopes.

I am a neuro' and nutritional and clinical psychologist in practice. I find all the articles of interest to my practice. For example, the article on Cognitive Functioning and Aging in Women is bringing the key issues of diagnosis and treatment in sharp focus. Reading through this article, I found myself brushing up some areas of differential diagnosis that I had forgotten over the years. The crisp distinctions drawn between Parkinson's, Lewy Body, Alzheimer's and the dementia in psychotic depression were illuminating.

I will also like to mention the article on Borderline Personality Disorders. To be honest, I have picked up some leads that I will integrate

with my clinical practice with such cases. The behavioral interventions mentioned are educating.

In my review, I am citing only two articles but other articles are similarly illuminating.

With all the kudos, I must also show the flip side of this book. As a clinician in practice, I would wish to see some detailed case reports with follow up. Also there should be a mention of areas of difficulty and "Why the treatment fails?" It would be nice to see how some experts manage the difficult cases or relapses. But, to be fair to the authors and the editor, this book is not geared to be a book of case studies—although I would like it to be such.

Before I finish, I wish to add that I did not find anything on nutritional interventions, ecologically induced brain allergies involving cognitive decline, the supplements and mental exercises and neuropsychological rehabilitation procedures.

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