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Anemia in the Elderly – Therapeutic Potentials of an Ayurvedic Formulation

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ABSTRACT

Anemia is not a normal manifestation of aging. Failure to evaluate anemia in aged population as well as untreated geriatric anemia may result in increased morbidity and mortality including decreased bodily functions. A proper management of anemia has shown to improve several adverse future consequences among the elderly. Iron replacement therapy is restricted due to severe risk profile particularly in reference to aging population. Aged individuals showing evidence of iron deficiency anemia completed a three months placebo controlled trial conjugated with an Ayurvedic formulation containing hydro-alcoholic extract of Hippophae rhamnoides (Amlavetas) *and* Aloevera (Ghritkumari) *in effective doses and were evaluated on various clinical symptomatology including certain bio-chemical estimations like Hb, RBC, serum protein, serum iron, serum ferritin, inflammatory cytokines (IL-6 and TNF-a) including CRP. The test drug supported in improving clinical complaints and increased the Hb, RBC, serum total protein, iron and ferritin levels. Further, decrease in inflammatory cytokines, IL-6 and TNF-a including CRP following test drug treatment which are known to enhance with advancing age and contribute in the onset of anemia, was in favour of improving the anemia and anemia associated adverse consequences among the aged people. There was no adverse reaction during the trial period.*

Key words : Anemia, Aging, Hippophae rhamnoides, Aloevera, Hemoglobin, Ferritin, Inflammatory cytokines

Aging is associated with a progressive decline in the function of multiple organ systems (Lipsitz, 2004). Some changes of aging are unavoidable where as some of them may be either delayed or prevented like morbidities and disabilities (Jagger, 2000). The incidence and prevalence of anemia increases with age (Ania *et al.,* 1994). The Third National Health and Nutrition Examination Survey reported that prevalence of anemia is 10 percent higher among the individuals aged 65 years and older (Guralnik *et al.,* 2004) than younger. Anemia was found more common in older men than in women. A recent review has revealed that prevalence of anemia in elderly patients was 29% to 61% in men and 3.3% to 41% in women (Zynx Health Incorporated, 2001). It is demonstrated by various studies that among women aged 65 years and older, hemoglobin levels lower than 13.5 gm/dl were associated with increased risk of mortality and functional impairment (Chaves *et al.,* 2004).

In older age, iron deficiency may be due to decreased absorption of iron, gastric achylia and increased circulating concentration of hepcidin. Hepcidin prevents the absorption of iron from the duodenum, and is a protein that is synthesized in the liver and its production is stimulated by intrleukin-6 (IL-6) (Nemeth *et al.,* 2004). Vitamin B_{12} deficiency as defined by biochemical criteria (homocysteine and methylmalonic acid deficiency) is common in elderly. Low level of vitamin B_{12} occur in 10% of the elderly but it is reported that 1-2 percent of elderly are anemic due to vitamin B_{12} deficiency (Carmel *et al.,* 2003). Level of C-reactive protein concentration may contribute to deferential diagnosis of anemia (Mitrache *et al.,* 2001).

Malnutrition, iron, folate and vitamin B_{12} deficiency alone or in combination may have 20-30 percent of anemia cases (Joosten *et al.,* 1992, Guralnik *et al.,* 2004). Anemia should not be considered as an inevitable consequence of aging, as the cause of anemia is identified in more than 80 percent of elderly people (Smith, 2000). Chornic diseases, infections, malignancies, iron deficiency, nutritional and metabolic disorders, blood loss are the common causes of anemia (Joosten *et al.,* 1992). Due to abnormal production of stimulatory cytokines and decreased responsiveness of the erythroid precursors are mostly responsible for the geriatric anemia (Ershler and Keller, 2000).

A serious consequence of anemia is functional dependence like decreased ability to perform daily living activities with mobility impairments (Penninx *et al.*, 2004). Marcantonio *et al.* (2000) reported that anemia is associated with increased risk of therapeutic complications. Several workers in the field have reported that anemia is an independent risk factor for the complications of drug therapy due to increased concentration of free drug in the circulation and chronic hypoxia of normal tissues (Ratain *et al.*, 1989).

Improvement in hemoglobin levels can also lead to improvement in the function of various organs. The significance of anemia in elderly patients is associated with chronic illness or inflammation. Erythrocyte sedimentation rate, fibrinogen, C-reactive protein, transferring, saturated and ferritin are associated in inflammation and disease like cancer, diabetes, liver disease, congestive heart failure etc. (Ezekowitz, 2003).

It is demonstrated that there is a direct relationship between the level of anemia and occurrence of various clinical condition. Physiologically, cardiovascular and pulmonary impairments are markedly associated with older people that can limit the effectiveness of compensatory response to low hemoglobin concentration. Even among the persons with low Hb levels were found to be at higher risk of mortality than the persons with higher level of Hb. Changes in stem cell physiology with age, decline in bone marrow cellularity, decline in colony forming units erythroid are some of the causes for unexplained anemia (Gale *et al.*, 1997). Further, changes in estrogen or testosterone levels with age, use of polypharmaceutical agents including alcohol, significant medical conditions, hypothyroidism are also associated with anemia (Zhang *et al.*, 1999).

Treatment of anemia may improve various clinical manifestations among elderly patients. Proper treatment is helpful in reducing the need of blood transfusion. Various studies have indicated improved renal function and ischemic heart disease with proper treatment of anemia (Bedani *et al.*. 2001).

Ayurvedic plants Hippophae rhamnoides and Aloevera were selected on the basis of their medicinal properties and pre-clinical safety and efficacy profile. The combined effect of plants showed beneficial role on hematocrit including hemoglobin enhancing property. Hippophae

belongs to Elaeagnaceae family and grow in high temperate zone of Himalayan region. The fruit of this plant contains maximum essential micro-nutrients and other nutritional substances like vitamin B_6 B_{12}, Vitamin C, carotenoids, Vitamin E, free amino acids, fatty acids and organic acids, mainly folic acid. Various studies have indicated that fruits and leaves of this plant contains biologically active substance which enhance immunity, acts as anti-oxidant, have anti-inflammatory and anti-atherogenic properties and also improves cognitive impairments (Chai *et al.*, 1989, Yang *et al.*, 2002, Geetha, 2002, Agrawal *et al.*, 2001).

Ghritkumari (Aloevera) belong to family Liliacease. The plant has triangular fleshy leaves, flowers and seeds. Aloevera contains active constituent, vitamins, enzymes, protein, lipids, minerals saponin, amino acids etc. It also contains vitamin B_{12}, and folic acid (Raynolds, 2004, Ni &Tizard, 2004). Further it provides calcium, chromium, copper, selenium, magnesium, sodium, potassium, zinc essential for proper function of various enzyme system and few are anti-oxidants. It provides plant steroids, b- sisosterol, lupeol, salicylic acid which have shown anti inflammatory action. C-glucosyl chromone isolated from gel extract is anti-inflammatory compound (Hutter *et al.*,1996).

Material and Method

In the present study ***Hippophae rhamnoides*** (Amlavetas) and Aloevera (Ghritkumari) have been selected on the basis of screening of plants to validate its beneficial role in the prevention and management of anemia among elderly people, aged 62-75 years, whose hemoglobin falling in anemia range with clinical evidence of anemia.

Inclusion criteria : Hemoglobin level 7-9gm, serum iron <60 mg/dl, serum ferritin <100ng/ml with some of the clinical complaints of anemia like lethargy, fainting, weakness, dysponea, palpitation, cerebral irritation, anginal pain, poor digestion, constipation, headache, lack of concentration, irritability and on clinical examination conjunctival pallor look was also assessed.

Exclusion criteria : Anemia due to aplastic anemia or other type of cancer, thalasemia, sickle cell anemia, renal diseases, liver diseases or anemia due to major chronic illnesses.

Under this study 94 elderly people of both sex (59 males and 35 females) showing hemoglobin level <9 gms with low level of RBC, serum iron and ferritin and total serum protein were selected. After a detailed preliminary screening of the subjects apart from clinical complaints and clinical examination a baseline estimation of hemoglobin, RBC, serum total protein and ESR were done by standard laboratory methods. Serum iron and serum ferritin estimations were done by ELISA method. Inflammatory bio-markers TNF-a and Interleukin-$_6$ was measured by ELISA kit method. C-reactive protein was determined by utilizing Kit for quantitative nephelometric determination of CRP in human serum or plasma Turbox/Turbox analyzer. During screening, the subjects were thoroughly explained about the drug trial and all the subjects had given their written informed consent to participate in the clinical trial program.

After baseline recording of the parameters, 51 elderly participants were given the hydro-alcoholic extract of dried fruits of *Hippophae rhamnoides* and dried leaves extract of Aloevera in effective doses for three months. Forty three elderly cases were kept on placebo therapy to compare the results. The subjects of both group were advised for a specific iron containing dietary supplement. After completion of three months treatment the base line values of parameters were compared in both groups. The placebo treated subjects were shifted to test drug therapy after 3 months.

Preparation of test drug

The hydro-alcoholic extract (30:70) of Hippophae rhamnoides and Aloevera in effective doses of daily schedule was added with the help of additional additive (sodium carbonate and starch) to make final capsule of 500mg. Each 500mg capsule contained extract of *Hippophae rhamnoides* 225mg and Aloevera 225mg and remaining additive. Before taking the drug for human consumption, the safety and efficacy profile was established through pre-clinical studies. Placebo capsules were prepared similar to test drug using barley powder and sodium carbonate.

Results & Observations

It is observed that the elderly subjects suffering from anemia and treated with test drug showed overall improvement in their general

health condition during the study period. The clinical symptoms like lethargy, fainting, dysponea, palpitation, cerebral irritability, anginal pain, poor digestion, constipation, headache, lack of concentration, feeling of irritability improved significantly in the test drug treated group in both the male and female cases where as placebo therapy did not show any beneficial result when given along with iron containing dietary supplement (Table 1, 2). On clinical examination conjunctival pallor look subjects improved after 3 months in test drug treated group.

When the test drug along with iron containing diet was given to anemic elderly cases, a significant increase in hemoglobin and serum total protein level was recorded (Table 3). The altered albumin globin ratio also corrected after increase in protein level under test drug treatment**.** The placebo treatment on comparison did not show any such change in the protein level.

Estimation of serum iron and serum ferritin helped in diagnosing the elderly anemia cases. A low values of both parameters were presenting characteristic of anemia among elderly subjects. After three months of treatment with test drug, improvement in serum iron and serum ferritin suggested the beneficial role of test formulation in the management of anemia among elderly people (Table-4).

The low level of hemoglobin was found to be associated with a mild decrease in red blood cell count also. The RBC level was low in females than their male counterpart. An increase in RBC following test drug treatment indicated the improvement in anemia of the elderly subjects. Similarly high concentration of CRP estimation showed association with elderly anemic subjects which reduced following test drug treatment in both male and female cases. A high CRP recorded in almost all the elderly anemic subjects reduced following 3 months test drug treatment. Placebo treatment did not influence the level of RBC as well as CRP establishing the beneficial role of test formulation (Table-5).

The value of pro-inflammatory cytokines, Interleukin-6 and TNF-a were estimated significantly higher in elderly suffering from iron deficiency anemia, but with treatment the values decreased significantly. Placebo treatment did not influence the levels (Table-6).

Table-1: Effect of test drug on clinical complaints associated with elderly anemia cases

Treatment group	Sex	No. of Cases	Clinical complaints													
			Lethargy		Fainting		Weakness		Dysponea		Palpitation		Cerebral irritability		Angina pain	
			B	A	B	A	B	A	B	A	B	A	B	A	B	A
Dietary supplement + Placebo	Male	27	(27)	(26)★	(2)	(2)★	(27)	(26)★	(11)	(12)★	(21)	(20)★	(3)	(2)★	(4)	(4)★
	Female	16	(16) 100	(15)★ 93.75	(4) 25.00	(4)★ 25.00	(16) 100	(15)★ 93.75	(11) 68.75	(12)★ 75.00	(15) 93.75	(15)★ 93.75	(3) 18.75	(4) ★ 25.00	(2) 12.5	(3)★ 18.75
Dietary supplement + Test drug	Male	32	(30)	(29)♣	(3)	(2) ♣	(30)	(25)♣	(17)	(11)♣	(21)	(17)♣	(2)	(2) ♣	(6)	(5)♣
	Female	19	(19) 100	(16)♣ 84.21	(2) 10.52	(1) ♣ 5.26	(19) 100	(16)♣ 84.21	(11) 57.89	(9) ♣ 47.36	(17) 89.47	(15)♣ 78.94	(2) 10.52	(1) ♣ 5.26	(2) 10.52	(1)♣ 5.26

B= Before treatment; A= After 3 months treatment
★=No improvement in percent; ♣= Improvement in percent

Table-2. Beneficial effect of test drug on clinical complaints associated with elderly anemia cases.

Treatment group	Sex	No. of Cases	Clinical complaints									
			Poor digestion		Constipation		Headache		Lack of concentration		Irritability	
			B	A	B	A	B	A	B	A	B	A
Dietary supplement + Placebo	Male	27	(26)	(25) ★	(18)	(19) ★	(17)	(16) ★	(26)	(26) ★	(25)	(26) ★
	Female	16	(16) 100.00	(15) ★ 93.75	(14) 87.5	(15) ★ 93.75	(13) 81.25	(12) ★ 75.00	(16) 100.00	(16) ★ 100.00	(15) 93.75	(14) ★ 87.5
Dietary supplement + Test drug	Male	32	(30)	(28) ♣	(24)	(21) ♣	(21)	(20) ♣	(31)	(27) ♣	(31)	(28) ♣
	Female	19	(17) 89.94	(16) ♣ 84.21	(12) 63.15	(10) ♣ 52.63	(9) 47.36	(7) ♣ 36.84	(18) 94.73	(16) ♣ 84.21	(19) 100.00	(16) ♣ 84.21

B= Before treatment; A= After 3 months treatment
★=No improvement in percent; ♣= Improvement in percent

Table-3. Increase in hemoglobin and serum total protein following test drug treatment in elderly anemia cases.

Treatment group	Sex	No. of Cases	Hb% (gm/dl)		Comp. Initial vs 3 months treatment	Serum total protein (mg/dl)		Comp. Initial vs 3 months treatment
			Initial	After 3 Months treatment		Initial	After 3 Months treatment	
Dietary supplement + Placebo	Male	27	8.59 ±1.25	9.08 ±1.06	T=1.55 P>0.05	5.34 ±0.72	5.68 ±0.84	T=1.59 P>0.05
	Female	16	8.06 ±0.57	8.34 ±0.72	T=1.21 P>0.02	5.08 ±0.73	5.01 ±0.83	T=6.25 P>0.05
Dietary supplement + Test drug	Male	32	8.61 ±1.03	11.84 ±1.48	T=10.13 P<0.001	5.13 ±0.87	6.80 ±0.65	T=8.69 P<0.001
	Female	19	7.85 ±0.56	10.91 ±1.02	T=11.46 P<0.001	5.11 ±0.62	6.35 ±0.78	T=5.42 P<0.001

Table-4. Improvement in Serum Iron and Ferritin level following test drug treatment in elderly anemia

Treatment group	Sex	No. of Cases	Serum Iron (µg/dl)		Comp. Initial vs 3 months treatment	Serum Ferritin (ng/ml)		Comp. Initial vs 3 months treatment
			Initial	After 3 Months treatment		Initial	After 3 Months treatment	
Dietary supplement + Placebo	Male	27	40.39 ±7.34	38.79 ±6.82	T=0.82 P>0.05	54.31 ±7.17	50.88 ±6.09	T=1.87 P>0.05
	Female	16	46.54 ±5.94	41.90 ±4.87	T=2.41 P<0.05	43.96 ±5.93	42.74 ±8.04	T=0.488 P>0.05
Dietary supplement + Test drug	Male	32	42.82 ±6.83	63.71 ±5.88	T=13.11 P<0.001	48.88 ±6.45	79.18 ±12.60	T=12.12 P<0.001
	Female	19	39.73 ±4.35	68.69 ±6.31	T=16.47 P<0.001	40.06 ±8.86	75.01 ±13.34	T=9.47 P<0.001

Normal range : 60-100µg/dl 100-300 (ng/ml)

Table-5. Beneficial role of test drug on RBC and CRP levels among elderly anemia cases.

Treatment group	Sex	No. of Cases	RBC (/mm)		Comp. Initial vs 3 months treatment	CRP (mg/L)		Comp. Initial vs 3 months treatment
			Initial	After 3 Months treatment		Initial	After 3 Months treatment	
Dietary supplement + Placebo	Male	27	4.53 ±0.41	4.49 ±0.36	T=0.38 P>0.05	5.82 ±1.09	5.76 ±1.13	T=0.19 P>0.05
	Female	16	3.64 ±0.26	3.71 ±0.30	T=0.70 P>0.05	4.84 ±1.12	5.03 ±0.98	T=0.51 P>0.05
Dietary supplement + Test drug	Male	32	4.41 ±0.33	5.29 ±0.48	T=8.54 P<0.001	6.21 ±1.34	3.71 ±0.82	T=9.00 P<0.001
	Female	19	3.51 ±0.22	4.39 ±0.34	T=9.47 P<0.001	5.53 ±0.97	2.93 ±0.68	T=9.56 P<0.001

Normal Range : 4.6-6.8mm (male); 3.8-5.8 mm (female) 1-3 mg/L

Table-6. Beneficial role of test drug on Interleukin-6 and TNF-α among elderly anemia cases.

Treatment group	Sex	No. of Cases	IL-6 (pg/ml)		Comp. Initial vs 3 months treatment	TNF-α (pg/ml)		Comp. Initial vs 3 months treatment
			Initial	After 3 Months treatment		Initial	After 3 Months treatment	
Dietary supplement + Placebo	Male	27	4.93 ±1.08	5.11 ±0.89	T=0.66 P>0.05	882.73 ±64.90	869.90 ±73.82	T=0.67 P>0.05
	Female	16	3.98 ±1.31	4.24 ±1.02	T=0.624 P<0.05	778.45 ±53.98	790.82 ±63.71	T=0.59 P>0.05
Dietary supplement + Test drug	Male	32	5.11 ±1.08	3.06 ±0.75	T=8.81 P<0.001	868.97 ±59.38	579.42 ±68.97	T=17.99 P<0.001
	Female	19	4.87 ±1.31	2.41 ±0.83	T=6.91 P<0.001	801.72 ±43.64	519.84 ±50.11	T=18.49 P<0.001

Normal range <1 (pg/ml) 25-800 (pg/ml)

Discussion

Correction and prevention of anemia may play a role in compression of morbidity (Balducci *et al.*, 2005). Anemia is a cause of hypoxia which limits the physical activity and impairs the synthesis of new proteins leading to an increase towards various type of disease susceptibility, which in turn may lead to more anemia. This kind of effect is due to catabolic cytokines associated with geriatric syndromes like dementia, osteoporosis, failure to thrive etc (Cohen *et al.*, 2003; Hamerman, 2004).

The late life anemia characterizes the persons at risk of development of various clinical conditions. The proper and safer management of anemia can prevent or minimize the onset of acute infection, chronic inflammatory diseases and even malignancies. Treatment of anemia may improve the future adverse events in elderly patients with or without chronic diseases. Early management of anemia improves the quality of life, exercise performance cognitive impairment and also reduced future blood transfusion.

B_{12} deficiency increases with age (Sipponen *et al.*, 2003). The cause is mostly the inability to digest food containing B_{12} due to decreased gastric secretion of hydrochloric acid and pepsin. B_{12} deficiency may be a cause of neurologic disorders including dementia (Scott *et al.*, 2004). As vitamin B_{12} deficiency is significantly associated with anemia, its supplementation is required. Both the plants, *Hippophae rhamnoides* and Aloevera contains vitamin B_{12} and vitamin C in sufficient quantity. The response to therapy may be understood through an increase in reticulocytosis following oral administration of the test drug. Further, folate deficiency also causes macrocytic anemia particularly among elderly people. *Hippophae rhamnoides* is rich in folic acid content and thus may act on red cell folate concentration and by reducing homocysteine level. In a recent study, the homocysteine lowering effect of Hippophae rhamnoides has been reported (Dubey *et al.*, 2008).

It is reported that in older individuals the secretion of erythropoietin and erythropoietic may be disturbed because of increased circulating concentration of IL-6 and other inflammatory cytokines (Ferrucci *et al.*, 2005). Further, it is reported that increased concentration of pro-inflammatory cytokines play a major role in the onset of anemia among the aged population. Several studies have indicated the immunomodulatory effects of polysaccharides found in Aloevera gel which acts through activation of macrophages cells to generate nitric oxide, and reduction in secretion of cytokines (TNF-a, IL-6) (Zhang & Tizard, 1996). The immunomodulatory action is also proven through glycoproteins found in Aloevera (Reynolds & Week, 1999). Artz *et al.* (2004) reported that 45 percent anemia cases were idiopathic in nature and their interleukin-6 level was significantly high. The present test formulation helped in the control of inflammatory process showing therapeutic benefit in this condition. The treatment with test drug significantly reduced the IL-6 and TNF-a levels showing its potentiality as anti-inflammatory response of gastric mucosa. Present study indicated the mechanism of action perhaps through inhibitory action on the arachidonic acid pathway through cyclo-oxygenase. As its synergistic effect, the extract of Aloevera has shown anti-oxidant effect. Further, the test drug has shown hepato-protective effects through stimulation of the secretary activity of the liver cells and preserving the metabolizing enzymes of the liver by its antioxidant role.

In case of iron deficiency, the treatment mainly consists of iron replacement. But iron therapy may not be successful due to risk profile of the medication like nausea, constipation, gastric irritation, poor absorption etc. Such preparations are not very expensive but some times may cause anaphylactoid reactions. The use of erythropoietin in the elderly may have negative consequence particularly increased blood pressure. Treatment of anemia with test formulation leads to improvement of energy level and quality of life in older people. Such an effect is because of increase in hemoglobin level following test drug treatment. In older people fatigue causes functional dependence, which is responsible for an individual to lose his ability to live alone and improvement in this condition is quite difficult. The compound extraction of *Hippophae rhamnoides* strengthens non specific immunity (Zhang *et al.*, 1989) and the seed oil of plant has capacity to restore the under inhibited state of immune function and also stimulate tissue regulation (Zhang *et al.*, 1989, Chenge *et al.*, 2003).

The biological activity of Aloevera is mainly hepato-protective, anti-inflammatory, immunomodulatory, haemopoiesis, anti-oxidant and reticulo-endothelial system enhancing effects (Talmadge *et al.,* 2004). The improvement in various bio-markers of anemia among elderly under study is due to the above properties of test drug (Chundan *et al.,* 2007). Hence, the result the elderly could be prevented from the manifestation of various chronic clinical conditions due to the check of anemic condition.

Several studies have demonstrated the impact of anemia on cognitive function. Argyriadou *et al.* (2001) reported significant cognitive impairment in anemic patients. Beard *et al.* (1997) reported Alzheimer's was more prevalent in anemia cases. The immuno-modulatory, anti-inflammatory, anti- anxiety and improvement in over all mental performance particularly memory and attention span has been reported by the workers treated with organic extract of *Hippophae rhamnoides* (Agrawal *et al.,* 2004). Further, studies indicated that different fractions of *Hippophae rhamnoides* have anti-oxidant effects. Regulation of glutathione peroxides, superoxide-dismutase enzymes and catalase inhibiting activity of *Hippophae rhamnoides* was studied later (Agrawal *et al.,* 2009).

It is concluded that anemia even mild in nature has a negative influence on the health of older individuals. Treatment with test formulation is effective particularly in reference to aged people as the haemoglobin of aged people should be maintained at minimum12mg/dl. It is proposed that treatment with test drug may be initiated at the initial symptom of fatigue when the hemoglobin level drop below 10mg/dl in order to prevent the functional disability of older people. The present test formulation can be proposed as a remedial measure for the prevention and management of mild to moderate anemia particularly among elderly people. The test drug is safe and can be given continually to longer time period.

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Perceptions and Risk Factors for Oral Cancers in the Rural Elderly

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ABSTRACT

This paper aims to assess the magnitude of risk factors for oral cancers; smoking, tobacco chewing and alcohol consumption in the elderly. It also probes the elderly perceptions on oral cancers. The work was conducted in village Shivanagi, North Karnataka. A total of 240 persons of 60+ ages were randomly selected and interviewed. Male members constituted 54.6%. Age-wise 71.7% were in the age group 60-65 years, 17.1% in the age group 66-70 years and 11.3% above 70 years. More than half of the elderly had at least one risk factor for oral cancers. Prevalence of risk factors was more in males (72.5%) than females (31.2%). A significant 42.5 % of the elderly chewed tobacco. More males (46.6%) than females (37.6%) chewed tobacco. One-third of the elderly males smoked beedis. About one-fifth of the elderly males drank alcohol regularly. None of the females smoked or drank alcohol. There were misconceptions about etiology of oral cancer. Less than half of the elderly had heard of cancer. Only one-third were aware of oral cancer. Of these, 30.3% indicated tobacco chewing, 20% smoking, 23.2% betel quid chewing and 14.9% alcohol as possible risk factors. Only one elderly (1.3 %) was aware of pre-cancerous lesions. As large as 77.5% thought that oral cancers could not be treated. Though there were variations in perceptions with the socio-demographic profile, none of it was significant. The source of information for majority (56.2%) was friends. Only 8.7% had received information from health personnel. It was concluded that prevailing high risk behaviour

coupled with low knowledge about prevention predisposes the rural elderly at risk for oral cancers.

Key words : Geriatrics, Elderly, Oral cancers, Perceptions, Risk Factors.

Oral cancer is a disease of old age (Shah, 2001). The A.A.A.R (average age adjusted rate) for oral cancers in Karnataka indicates that the peak incidence is at age group 65-69 years in males and 60-64 in females (ICMR, 2004). As per census 2001, 7.6% of population comprises elderly more than 60 years and 80% of them (60 million) reside in rural area (Park, 2009). India has one of the highest rates of oral cancers in the world. Oral cancers account for one-third of total cancers in our country (ICMR, 2004).

Oral cancers have well known risk factors and pre malignant lesions. They are highly amenable to prevention and early diagnosis (Horowitz, 2001). Treatment at pre malignant and early malignant phase is associated with improved survival rates. Cancers when diagnosed in advanced stages require aggressive treatment and are associated with higher morbidity and mortality rates (Reis *et al.*, 2000). Lack of awareness about oral cancers predisposes to late diagnosis. Late treatment leads to disability to speak, swallow, breathe and chew causing major functional, cosmetic and psychological burden. Knowledge about risk factors and signs of oral cancers will lead to early detection reducing their morbidity and mortality.

Objectives

1. To determine the use of smoking, tobacco and alcohol in the elderly.
2. To assess the perceptions of elderly about risk factors, precancerous lesions, diagnosis and treatment of oral cancers.

Method

The setting was geriatric population (age >60 years) in village Shivanagi, rural field practice area of Department of Community Medicine, BLDEA's Shri B.M. Patil Medical College, Bijapur, Karnataka. The study was conducted during June 2008 to August, 2008.

Sampling

The field practice area covers a population around 8000. The number of people aged 60 years or more was estimated to be 608. A 50% sample of the 60+years was decided for this study by systematic

random sampling of houses through home visits. Those who did not give consent or were unavailable were excluded. Thus, the study sample was 240. The elderly were interviewed with a pre-tested questionnaire in his/her own house. The 80 elderly who had awareness about oral cancer were further interviewed about their perceptions.

The data obtained was manually transferred and summarized from the questionnaires onto tables. Statistical analysis included percentages and Chi-square test or Fishers Exact test using Epi-info v-6 software (Dean *et al.*, 1994).

Results

Table 1 : Socio-demographic characteristics of elderly (n=240)

Age	**n**	**%**
60-65 years	172	71.6
66-70 years	41	17.1
> 70 years	27	11.3
Sex		
Male	131	54.6
Female	109	45.4
Education		
Illiterate	203	84.6
Up to primary	22	9.2
Middle and above	15	6.2
Occupation		
Agriculture	200	83.3
Others	40	16.7
Religion		
Hindu	180	75.0
Muslim	60	25.0
Access to communictaion		
Radio	142	59.2
Television	40	16.7
Newspaper	13	5.4

Of the 240 geriatric residents interviewed, 54.6°/o were males and 45.4% were females. 71.6% were in the age group 60-65 year, 17.1% in 66-70 year and 11.3% above 70 years. Majority (84.6%) were illiterate, 9.2% had education up to primary level and 6.2% had middle level education or above. Majority (83.3%) of the elderly had agriculture as their past or present occupation. 75% were Hindus and

25% were Muslims. 59.2% of the elderly had access to radio, 16.7% to television and 5.4% to newspaper.

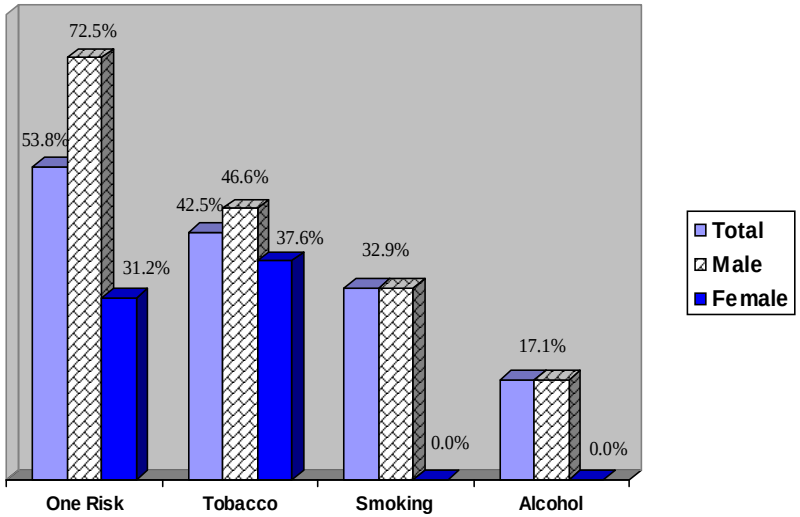

Fig. 1 : Prevalence of risk factors in elderly (n=240)

One hundred and twenty nine (53.8%) elderly indulged in a habit associated with risk for oral cancers; smoking, tobacco chewing or alcohol. Their prevalence was more in males (72.5%) as compared to females (31.2%).

Tobacco chewing

One hundred and two (42.5%) elderly chewed tobacco. Majority (89.2%) had the habit for 10 or more years. More males (46.6%) than females (37.6%) used tobacco.

Smoking

None of the elderly females smoked. Smoking, in the form of Beedi, was prevalent in 79 (32.9%) elderly males. More than half (53.2%) of the smokers consumed more than 20 beedis per day and majority (89.9%) were smokers for 10 or more years.

Alcohol

None of the elderly females drank alcohol. Forty one (17.1%) elderly males drank regularly. Of these, 78% had been drinking regularly for 10 or more years.

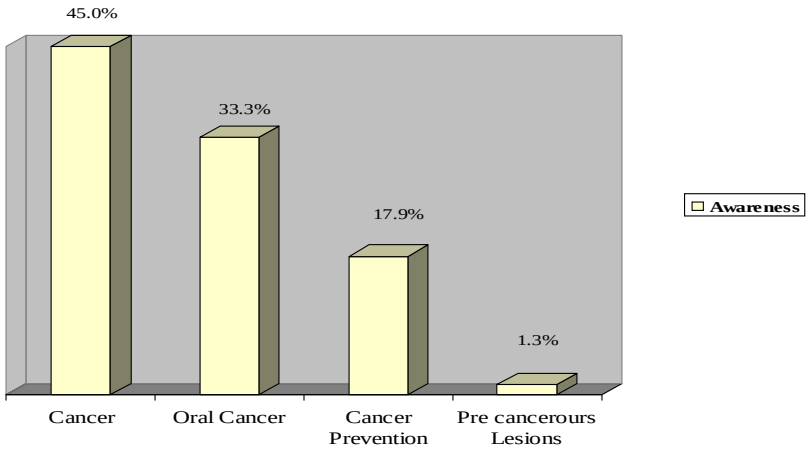

Fig. 2 : Awareness of Elderly about cancer (n=240)

Perceptions about prevention of oral cancers

One hundred and eight (45%) elderly were aware of cancer. Of these, 80 (33.3%) knew about oral cancer and 43 (17.9%) thought that oral cancer could be prevented and indicated possible risk factors could be tobacco chewing, smoking or alcohol. Only 1 (1.3%) was aware of the pre-cancerous lesions.

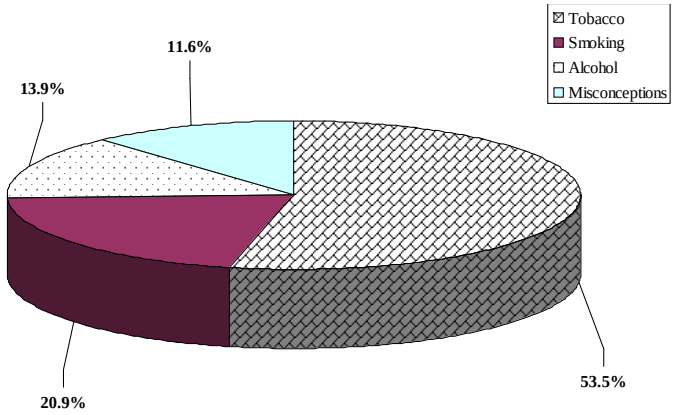

Fig. 3 : Perceptions about causes of oral cancers (n=43)

Perceptions about causes of oral cancers

Of the 43 elderly who related oral cancers with a risk factor were asked for one main cause of oral cancers. Twenty three (53.5%) elderly thought that tobacco chewing caused oral cancers, 9 (20.9%) related it to smoking. Only 6 (13.9%) elderly thought alcohol could be a cause. Five (11.6%) had misconceptions that oral cancers were caused by past sins or God's curse.

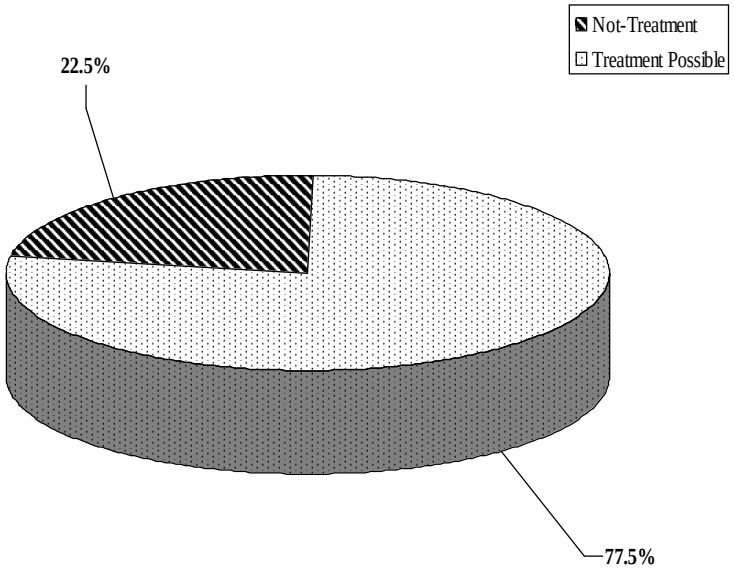

Fig. 4 : Knowledge about treatment of oral cancers (n=80)

Perceptions about treatment of oral cancers

Only 18 (22.5%) of the elderly thought that it was possible to treat oral cancers. As high as 62 (77.5%) believed that oral cancers could not be treated. None of the elderly had ever been screened for oral cancers. Although, there were variations in perceptions about risk factors, prevention and treatment of oral cancers with gender, religion, literacy status and access to communication; none of these were significant.

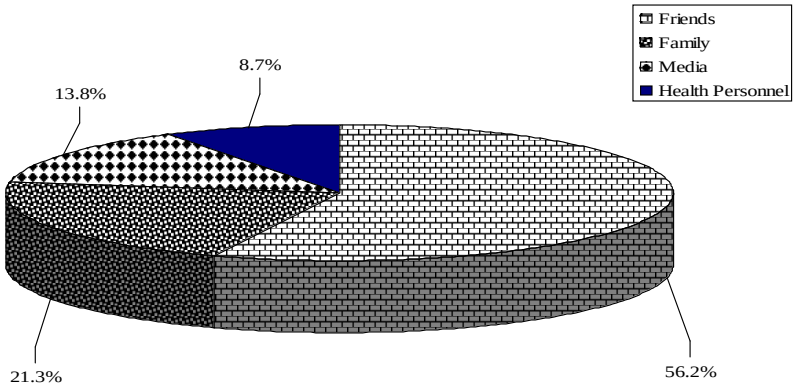

Fig. 5 : Knowledge sources for elderly (n=80)

Knowledge sources for elderly

Forty five (56.2%) of the elderly had their information through friends, 17 (21.3%) got the information from a family member and 11 (13.8%) through media. Only 7 (8.7%) had received the knowledge from health personnel.

Discussion

This study revealed that more than half of the elderly have at least one of the risk factors for oral cancers; tobacco chewing, smoking and alcohol. Nearly three-fourths of male elderly and one-third of female elderly have at least one high risk habit for oral cancers. Nearly half of the elderly chew tobacco and one-third smoke beedis. Tobacco chewing is similar in both the genders; alcohol consumption and smoking is prevalent in males only. Similar high prevalence of smoking beedis (57%) and alcohol use (16.3%) was found in the rural elderly in Haryana (Goswami, 2005). Smoking has been found to be a common habit in the rural elderly (NFHS, 2001).

Less than half of the geriatric residents are aware of cancer and only one-third is aware of oral cancer. This is coupled with an alarming lack of awareness about the pre-cancerous lesions. Virtually all (98.7 %) had no idea that a white / red patch or a non-healing ulcer in the mouth could be an early sign of cancer. Similar lack of awareness

(70%) regarding early signs of oral cancers was documented amongst the South Asians adults living in London (Shetty *et al.*, 1999). In the developed countries, it was different, where 66% of New York residents (Gustavo *et al.*, 2002)) and 86% of North Carolina adults were aware of oral cancer (Patton *et al.*, 2004). Lower knowledge (33.2%) in this population is attributed to the illiterate subjects with rural background.

Majority (82.1%) of the elderly did not think that oral cancers are associated with a risk factor. Only 43 (17.9%) associated oral cancers with a cause. Of these, 53.5% of elderly linked them with tobacco chewing, 20.9% elderly linked them with smoking and 13.9% with alcohol, whereas 11.6% had misconceptions that oral cancers were caused by past sins or God's curse. Similar lack of knowledge was seen in the community in Babol, Iran where 76% had no knowledge of risk factors for oral cancers (Mottallebnejad, 2009). The risk factor knowledge was higher among the South Asians in London (Shetty *et al.*, 1999). This reflects lack of dissemination of the health education about cancers in India.

Knowledge regarding treatment of oral cancers is lacking. Only about one-fourth of elderly think that oral cancers can be treated. Nearly three-fourth believes that cancer is a fatal disease without any possible treatment. None of the elderly has ever had an examination done to rule out oral cancers. Use of health workers for early detection has been advocated (Sankarnarayanana, 1997). In Kerela, a randomized control trial of oral screening resulted in significant reduction in (21%) mortality from oral cancers (Sankarnarayanana *et al*, 2006). Yet, there is a lack of preventive dental care to the geriatric rural in India (Shah, 2001). In contrast, in United States, 13% of adults aged 40 years or older had an oral examination for screening for oral cancers (CDC, 1994).

Sources of information for most elderly are either friends or family. Though the availability of TV and newspaper is minimal to the elderly, more than half of them have access to radio. Despite this, only 13.8% have media as their knowledge source. Even fewer (8.7%) have received information from health personnel. Thus, the reliable sources of information are lacking.

Conclusion and Recommendations

The study concludes that the prevailing high risk behaviour and low knowledge about prevention of cancers predisposes the rural elderly at a risk for oral cancers. There is an alarming lack of awareness about oral cancers, their prevention and pre-cancerous lesions. There are lacunae about risk factors for oral cancers. There is extensive information gap about screening and treatment. This study also reveals that the health system has had an inadequate role in filling up of this gap and misconceptions exist.

Considering the vast population of the elderly in rural India, an effort must be made to sensitize the policy makers, health care providers and the community. Multi-pronged Geriatric oriented oral health education and promotion campaigns must be initiated at village level. Elderly-focused effective behavioural risk reduction strategies should be devised for cessation of smoking, tobacco chewing and alcohol intake. Screening programs for early detection of oral cancers in the elderly population with a simple torch light examination should be designed. Integration of these campaigns with the current health system could be a cost-effective approach. There is a need to explore the role of the existing village level and primary health care providers towards the special needs of the elderly population. Effectiveness could be increased with the utilization of the media. There is a need to reorient the dentists and the clinicians on geriatric oral care.

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Prevalence and Profile of Possible Alzheimer's Disease in Tehri Grhwal, Uttarakhand

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ABSTRACT

The frequency of dementia, of which Alzheimer's Disease is a common form, doubles every five years after the age of 60. This has important public health implications for developing countries like India, whose population is aging rapidly. A cross-sectional, descriptive study was therefore undertaken to find out the prevalence of possible Alzheimer's Disease in the over-60 years old hilly population of Tehri Garhwal, Uttarakhand, and to determine the caregiver status of the patients. The sample, obtained through multistage simple random sampling method, consisted of 520 respondents. Information was obtained using a pre-tested questionnaire with standardized batteries to assess cognitive functioning, geriatric depression and day-to-day abilities. The prevalence of possible Alzheimer's Disease in the over-60 years age-group was found to be 10.0 % (95 % CI 7.4 – 12.6), and it was more (11.9 %) in women than in men (7.8 %). A whopping 42.3 % of the sufferers were in Stage-I, 40.4 % in Stage-II and 17.3 % in Stage-III. Though most of them (78.8 %) were head of the family, only 55.8 % were involved in decision making at home and 57.7 % were widow/widower. Almost all (96.1 %) had own a house, 94.2% had a separate room for themselves, but 65.4 % had to go out into the open/fields for toilet needs. For most (80.8 %) the nearest health facility was a government PHC/ CHC, but for 55.8 % the nearest health facility was at a distance of >2 km. Majority had no pension. The care-givers were mostly daughter-in-laws (38.5 %), while 15.4 % had no care-giver.

Key Words : Alzheimer's Disease, prevalence, hilly population

Alzheimer's Disease (AD), the most common form of dementia (Plassman *et al.*, 2007), is an acquired cognitive and behavioural impairment of sufficient severity that markedly interferes with social and occupational functioning. Alzheimer's disease and other dementias are already a major public health problem among the elderly in industrialised countries. These dementias could also have a devastating impact on developing countries, whose populations are aging rapidly. By the year 2020, approximately 70 % of the world's population aged > 60 will be located in developing countries, with 14.2 % in India (WHO, 1998). Alzheimer's disease is the fourth leading cause of death in industrialized countries (ICMR, 2001). Memory loss is the most common and well known symptom of Alzheimer's disease. Other symptoms include loss of cognitive abilities, judgment, thinking and disorientation to place and time (Chip, 2005). Dementia and AD are age related. The frequency of dementia, of which AD is the most common form, doubles every five years after the age of 60 (ICMR, 2001). Studies of their prevalence rates and determinants are, therefore, of medical and social importance.

Aims and Objectives

1. To find out the prevalence of possible Alzheimer's Disease in the elderly residents of the hills of Tehri Garhwal.
2. To assess the facilities and support available to the sufferers.

Material & Methods

Population under study : The over-60 years old residents of District Tehri Garhwal, Uttarakhand.

Sampling : I was a multi-stage random sampling. The district of Tehri Garhwal has 9 blocks with a total population of 6,04,608 as per 2001 census (Pan India Network, 2009). One out of nine Blocks in the district, Block Bhilangana with a population of 1,03,002 (Pan India Network, 2009), was selected randomly in first stage sampling. Eight Gram Sabhas out of ninety-five in the block were selected randomly in the second stage. All the 8 gram sabhas (total population 6061) were surveyed by house-to-house visit. In this population, the eligible age-group numbered 520. The minimum sample size required for the study, at 10 % allowable error and 95 % confidence limit, was 384.16 (say, 385).

Exclusion criteria: The deaf/dumb, those with diagnosed psychiatric illnesses (schizophrenia and mental retardation), and those suffering from neurological disorders (stroke, Parkinsonism, epilepsy) were excluded, since there was no way to obtain reliable information from them.

Data collection procedure and instrument used: Informed consent was obtained from the respondents either by their signature/ thumb impression. Initial evaluation of the subjects was on a pre-tested questionnaire containing various socio-demographic parameters and support factors. The next part consisted of the 10 warning signs of Alzheimer' diseases (Alzheimer's Association, 2009) followed by standardized batteries EASI (Fillenbaum *et al.*, 1999), HMSE (Ganguli, Chandra, Gilby *et al*, 1996) and GDS-15 (Ganguli, Dubey, Johnson *et al*, 1999). Information for EASI was collected to assess physical functioning of the respondent. Thus, even when subjects could not be tested cognitively because of sensory impairment or illness, it was possible to obtain functional ability data. HMSE and GDS-15 were used to assess geriatric depression and cognitive functioning. The interview was conducted in Hindi/Garhwali, languages familiar to the respondents.

Operational defining criteria :

1. Subjects were classified as "possible" Alzheimer's if they responded positively to any one of the ten warning signs of Alzheimer's Disease from the checklist developed by the Alzheimer's Association.
2. Subjects were classified as "functionally impaired" based on their inability to perform three or more items on EASI Scale.
3. The geriatric depression scale was applied to find out the presence of hitherto undetected depression. A score of >5 points was taken to be suggestive of depression, score >10 almost always depression.
4. Those diagnosed with possible Alzheimer's Disease were classified into 3 stages of the disease, Stage-I (mild), Stage-II (moderate) and Stage-III (severe) (Helpguide.org, 2009).

Statistical analysis: The data was compiled and analyzed using Epi-Info version 6.

Results and Discussion

Table-1 : Prevalence of Alzheimer's Disease in the Study Population

Gram Sabha	Total Population			Population >60 yrs. old			Prevalence of Alzheimer's disease in the > 60 yrs. old		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Doni	639	848	1487	58	69	27 (8.5 %)	04	11	15 (11.8 %)
Dang	499	585	1084	45	42	87 (8.0 %)	01	01	02 (2.3 %)
Saruna	158	202	360	11	14	25 (6.9 %)	01	02	03 (12.0 %)
Aali	123	157	280	09	11	20 (7.1%)	01	01	02 (10.0 %)
Jakh	603	654	1257	52	59	111 (8.8 %)	06	08	14 (12.6 %)
Bheti	207	233	440	15	19	34 (7.7 %)	02	01	03 (8.8 %)
Khaseti	243	297	540	24	28	52 (9,6 %)	03	05	08 (17.3 %)
Pakh	282	331	613	29	35	64 (10.4 %)	01	04	05 (7.8 %)
TOTAL	2754	3307	6061	243 (8.8%)	277 (8.4%)	520 (8.6%)	19 (7.8 %)	33 (11.9%)	52 (100.0%)*

*X^2 = 2.41, df = 1, p = 0.12

Table-1 shows the prevalence of possible Alzheimer's disease in the studied population. The eligible age-group for the study comprised 8.6 % of the total population, 8.8 % in males and 8.4 % in females. The prevalence of possible Alzheimer's disease in the study population was found to be 10.0 % (95 % CI 7.4 – 12.6). It was higher in women (11.9 %) than in men (7.8 %), with Odd's Ratio of 1.59 (95 % CI 0.85 – 3.01). A study in Rotterdam (Ott *et al.*, 1995) found the prevalence of Alzheimer's disease to be 4.5 %, and the disease was the main sub-diagnosis (72 %) of all types of dementia. More women (5.8 %) than

men (2.6 %) were reported to be suffering from the disease. A study in Kerala (Shaji *et al.*, 2005) found the prevalence of Alzheimer's disease to be 15.5/1000, (95 % CI 9.6 - 20) and the male : female ratio in the number of cases (***not*** the prevalence in each gender group) was 1 : 1.3. The higher prevalence found in the present study may probably be due to the fact that the diagnosis of **possible** Alzheimer's Disease was made on the basis of presence of any one of ten warning signs of the disease as recommended by the Alzheimer's Association, leading to possible over-diagnosis of the condition in this population-based field study. Without confirmation at necropsy, subtyping dementia remains uncertain. The current diagnostic criteria used are of limited accuracy, which complicates all large population based dementia studies. However, despite this limitation, and in view of the fact that AD is the most common form of dementia, the prevalence of the condition in this elderly, hilly population is very high.

Table-2 : Profile of Respondents with Symptoms of Alzheimer's Disease (n = 52)

Characteristic	Male (n = 19)	Female (n = 33)	Total (n = 52)	p-value
Stage of the Disease				
Stage-I (Mild)	04(21.1%)	08 (42.1%)	07 (36.8%)	
Stage-II (Moderate)	18 (54.5%)	13 (39.4%)	02 (06.1%)	
Stage-III (Severe)	22 (42.3%)	21 (40.4%)	09 (17.3%)	0.007
Position in the Family				
Head	19(100.0%)	22 (66.7%)	41(78.8%)	
Ordinary Member	-	11(33.3%)	11(21.2%)	0.013*
Marital Status				
Unmarried	-	01(03.0 %)	01(01.9%)	
Married	13(68.4 %)	08(24.2 %)	21(40.4%)	
Widow/widower	06(31.6 %)	24(72.7 %)	30 (57.7%)	0.002^
Involved in Decision-making	13(68.4%)	16(48.5%)	29(55.8%)	0.163

* Yates' corrected (one cell has expected value <5)

^ For the Chi-square test, the unmarried have been clubbed together with widow/widower since both are without spouse

Table-2 : A total of 42.3 % of those suffering from the disease were in Stage-I (21.1 % males, 54.5 % females), 40.4 % were in Stage-II (42.1 % males, 39.4 % females), and 17.3 % were in Stage-III (36.8 % males, 06.1 % females). Significantly, more men than women were found to have severe (Stage-III) disease, while more than half the women sufferers had mild disease (p = 0.007). More than half (57.7 %) of the sufferers were widow/widower. A hospital-based study (Shaji *et al.*, 2009), also found 52.5 % of the sufferers of dementia to be widow/widower. In our study, those without a spouse to care for them (unmarried, widow/widower) constituted 59.6 % of the sufferers, and this was statistically significant (p = 0.002).

Facilities available to the sufferers (table not shown) : Fifty (96.1 %) respondents had their own house, 49 (94.2 %) had a separate room for themselves. Only 18 (34.6 %) had their own toilet, the majority two-thirds had to go out into the open/field for their needs. Even out of the 18 respondents who had the luxury of a toilet, only 5 (27.8 %) had the toilet within their house compound, the other 13 (72.2 %) had to go outside the house compound for their needs. Going outside in the field, particularly in the night time, is very difficult for the elderly, more so for a sufferer of Alzheimer's disease. Only 16 (30.8 %) had some own income in the form of a pension, the majority of which, 11 (68.7 %), were receiving meagre amounts as old-age/widow pension. Of the women, the large majority, 25 (75.7 %) received no pension, reflecting their poverty and economic dependence. Only 10 (19.2 %) had the nearest health facility within 1 km, 13 (25.0 %) between 1-2 km, and the majority 29 (55.8 %) had to walk >2 km to the nearest health facility. Although the nearest health facility for most, 42 (80.8 %), was a government health centre (PHC/CHC) the majority, 19 (63.5 %), availed routine health care from other sources, mostly unqualified practitioners. 8 (15.4 %) had no care-giver while most, 20 (38.5%), of the care-givers were daughters-in-laws, 21 (47.7%) were engaged in agriculture and 19 (43.2 %) were house-wives. Those engaged in agriculture work for long hours in the field and have limited time to care for the sufferers. The physical and emotional health of the primary

care-giver is critical to optimal care of the patient with Alzheimer's disease. Strangely, in some countries, care-givers suffer from increased rates of depression and physical illness and are prescribed medications at a higher rate than persons not required to be in a care-giving role (Schulz *et al.*, 1995).

Conclusions

The prevalence of possible AD in the study population, 10.0 % (95 % CI 7.4 – 12.6), is the highest reported so far from any other part of the country, despite the limitations of this population-based field study. The women were 1.59 times at higher risk of the condition than men. While most were heads of the family, only about half were involved in decision-making in the homes, reflecting the loss of importance, command and prestige they suffer as a result of the condition. While most of them had their own house and their own room to themselves, about two-thirds had no toilet facilities and had to go out into the open/fields for their needs, reflecting the difficulty that the elderly sufferers in this regard. For most, the nearest health facility was a government PHC/CHC, but more than half had to walk >2 km to reach the nearest health facility. More than two-thirds of the sufferers, and more than three quarters of the women sufferers, had no pension. The care-givers were mostly daughters-in-law (38.5 %), while 15.4 % had no care-givers.

Our study reflects the magnitude of the disease in the elderly hill-dwellers of Tehri Garhwal, and demonstrates the poverty and lack of facilities they face. Early diagnosis and treatment would go a long way to arrest the progress of the disease and improve their quality of life. There is need to target the elderly in this region for provision of priority care and services. At the same time, the care-givers also need to be guided, counseled and supported to reduce their stress.

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Assessment of Nutritional Status of Elderly by Mini Nutrition Assessment Scale in Old Age Homes of Jaipur (4)

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ABSTRACT

In order to assess nutritional status of elderly people, a community based cross-sectional study was done on 120 elderly people of old age homes of Jaipur, selected by adopting appropriate sampling technique. Nutritional status of the subjects was assessed on the basis of Mini Nutritional Assessment Scale and anthropometry. According to MNA Scale majority (55.5%) of the elderly were at the risk of malnutrition, out of which 39 (61.9%) being males and 22 (46.8%) females. Where as 8.1% aged was malnourished and 36.4% were well nourished. A total of 42.7% had a BMI of >23 while those having BMI between19-21 were 28.2% and 15.5% had BMI of 21-23. Only 12% were obese i.e. having BMI >25. Majority (88.2%) had MAC >22cm while those having MAC between 21-22 cm were 6.4% and those with MAC <21 cm were 5.4%. The difference of MAC with nutritional status was found to be highly significant. Calf circumference of three fifth (65.5%) of the respondents came out to be <31cm.While remaining had a normal circumference of >31 cm.

Key Words : Nutritional status, Malnutrition, Anthropometry, Elderly.

In past few decades, India and other developing countries had unprecedented rise not only in the absolute numbers but also in the

relative share of older persons. The elderly population in India in 1961 was 5.63%, numbering around 24.7 million whereas in 2001 it rose to 7.4% (76.6 millions) (Puspanjali *et al*., 2005). Projections indicate that by the year 2020, there will be 470 million people aged 65 and above in developing countries, more than double the number in developed countries (UN, 1992). The need for long-term care will rise as the elderly population increases. Nutrition is a key component in maintaining good health, mobility and quality of life of the elderly individuals. Early detection of nutritional deficiency or abnormality is important for avoiding costly chronic conditions or diseases (Sai *et al*., 2008).

The Mini Nutritional Assessment (MNA) is a simple and non-invasive tool for assessing nutritional risk of the elderly. The MNA screen is composed of simple anthropometric measurements and questions for assessing global indicators, key markers of food intake patterns, and subjective self evaluated health parameters (Sai *et al.*, 2008). Simple anthropometric measurements including weight, height (for calculating BMI), and mid-arm and calf circumferences, are also needed.

Materials and Methods

A cross-sectional study was undertaken on 120 elderly more than 60 years of age, residing at the four old age homes of Jaipur district in 2009. Multi-stage sampling method was used to select them and data was collected by interviewing the aged people using Mini Nutrition Assessment Scale (Rubenstein *et al*., 2001; Guigoz, 2006, Vellas *et al*., 2006) which includes various parameters, anthropometric measurements related to nutrition. The data was entered using SPSS Version 15.0 software and analyzed by using statistical test like chi-square test.

The MNA comprises 18 weighted items including anthropometric measurements and questions related to lifestyle, medication and mobility, a dietary assessment and questions related to self-perception of health and nutrition; each assigned a weighted score ranging from 1 to 3 points and has a total score of 30 points. The sum of the MNA score classifies the individuals in the following manner: Well-nourished e" 24 points (MNA-1); at risk of malnutrition, 23.5 to 17 points (MNA-2); malnourished, < 17 points (MNA-3). The instrument theoretically could

be an ideal screening tool for identifying elderly who are in need of nutritional intervention or treatment in a general elderly population (Rubenstein, 2001; Guigoz, 2006, Vellas *et al.*, 2006). However, data on the nutritional status of elderly are limited. In this study our objective was to employ the MNA to assess the prevalence of malnutrition in elderly men and women of old age homes.

Results

Table 1: Nutritional status of elderly

MNA Scale	Male n (%)	Femalen n (%)	Total n (%)
Well nourished (≥24 points)	23 (33.3)	21 (41.2)	44 (36.7)
At risk of malnutrition (23.5 to 17 points)	42 (60.9)	23 (45.1)	65 (54.2)
Malnourished (<17 points)	4 (5.8)	7 (13.7)	11 (9.1)
Total N (%)	69 (100)	51 (100)	120 (100)

[@]χ^2(MNA)-55.58; df-2; p<0.0001; *χ^2(male: female)-3.85; df-2; p>0.05

Table 1 shows that majority (55.5%) of the elderly were at the risk of malnutrition, out of which 39 (61.9%) being males and 22 (46.8%) females, where as 8.1% aged was malnourished and 36.4% were well nourished. The association between malnourishment was found to be highly significant.

Table 2 shows highly significant difference of nutritional status with BMI, MAC and CC of the elderly. Majority (42.7%) had a BMI of >23 while those having BMI between19-21 were 28.2% and 15.5% of the aged had BMI of 21-23. Only 12% were obese i.e. having BMI >25.

Majority had healthy muscle mass showing no senile atrophy (88.2%), had MAC >22cm while those having MAC between 21-22 cm were 6.4% and those with MAC <21 cm were 5.4%. The difference of MAC with nutritional status was found to be highly significant.

Table 2 : Table showing Anthropometric measurements

BMI[#]	n	%
<19 kg/ m^2	16	13.6
19-21 kg/ m^2	34	28.2
21-23 kg/ m^2	19	15.5
>23 kg/ m^2	51	42.7
Total	120	100
Mid Arm Circumference[@]		
<21 cm	6	5.4
21-22 cm	8	6.4
>22 cm	106	88.2
Total	120	100
Calf Circumference*		
<31 cm	79	65.5
>31 cm	41	34.5
Total	120	100

[#]χ^2(BMI)-34.40; df-3; p<0.0001 [@]χ^2(MAC)-245.10; df-2; p<0.0001; [*]χ^2(CC)-24.07; df-1; p<0.0001;

Calf circumference of three fifth (65.5%) of the respondents came out to be <31cm, while remaining had a circumference of >31 cm.

Discussion

In India, there are very few studies on the nutritional status of elderly using the Mini Nutritional Assessment (MNA) Scale while some studies are done outside India. This is probably the first study that was done on the nutritional status of the elderly old age home residents in India. Our study revealed that 8.1% had malnutrition, 55.5% were at the risk of malnutrition while only 36.4% were well nourished. There are many physical and clinical factors that lead to malnutrition. Many elderly experience social, familial and economic changes. Some got pension while others had no source of earning or live in poverty and are facing ill health because of an inadequate diet. Social isolation, loneliness, depression, minority status, care-giver burnout, lack of cooking and shopping skills and economic concerns can place elder people at moderate to high nutritional risk.

Malnutrition was also common among elderly residents of Finland. According to the MNA, 11% to 57% of the studied elderly people suffered from malnutrition, and 40–89% were at risk of malnutrition, whereas only 0–16% had a good nutritional status. The prevalence of malnutrition was 15% in old people's homes and 2 to 5% among the elderly people who lived at home (Merja, 2007).

Ruiz-Lopez *et al.* (2003) found 8% malnourished; 62% at risk of malnutrition in their study. Cairella *et al*, (2005) observed 5% malnourished, 60% at risk of malnutrition in a population study. Salmisen (2006) observed in a cross-sectional study on community dwelling elderly women less malnourished (only 1) and less (7%) at risk of malnutrition than our study. Visvanathan (2006) revealed in an analysis and follow-up study on 250 elderly that according to MNA 5% with malnutrition, 38% were at the risk of malnutrition. According to MNA, 15% of patients were well-nourished, 65% at risk of malnutrition and 20% were malnourished in a study by Hengstermann *et al.* (2008). Our study showed 12.8% females were malnourished as compared to men, just 4.8%. Another descriptive study by Tur *et al.* (2005) on a community dwelling elderly people also found more malnourished women (5%) than men (1%).

A critical risk factor of malnutrition among older is their declining need for energy due to a reduction in the amount of lean body mass and a more sedentary lifestyle (Volkert *et al.*, 1991). BMI, MAC and CC, all three indicators are components of the MNA and all reflect one's general nutritional status and body weight and body fatness status. MAC and CC are also indicators of body muscle and subcutaneous adipose tissue. BMI is one of the six best items in the MNA to predict nutritional risk status. CC is crucial for maintaining one's mobility (Sai *et al.*, 2008).

The elderly subjects had short stature whereas their body weight and body mass index (BMI) were not low, especially among the women, compelling female elderly to reduce their food intake to control the weight (Christensson *et al.*, 2002). A study carried out in a long-term care facility in central Taiwan revealed 17% of participants had MAC below 21 cm, 9% were between 21 and 22 cm while 73% of participants had CC below 31 cm only. 4.7% of male but 26.2% of female

participants had subnormal MAC (<21cm) and another 4.7% of male and 12.3%of female participants had marginal MAC (21-22 cm). For CC, 62% of male and 80% of female participants were subnormal (<31 cm) according to the original MNA scale (Sai *et al*., 2008).

Mamhidir *et al.* (2006) in a study in central Sweden revealed that 35% elderly with BMI<22 were classified as underweight and 11% had a BMI>30, similar to the study Christensson *et al*. (2002).

Thomas *et al*. (2002) found a high prevalence of overweight (56% in men and 39% in women) and obesity (17% in men and 21% in women) among the participants.

A study by Lin *et al.* (2007) on geriatric patients in Singapore found 33% (MNA<17) were malnourished, 37% were underweight (BMI <18.5 kgm-2), and 51% were determined by MNA to be at risk of malnutrition. The mean BMI, MAC and CC were significantly lower (BMI: 20.7 vs 16.8 kgm-2; MAC: 25.9 vs 22.4 cm; CC: 30.5 vs 26.4 cm) in the malnourished group compared with the non-malnourished group.

Clausen *et al.* (2006) in a study in Botsawa observed that < 18.5 BMI were in - 17.5%; 18.5-29.9 in 65.0%; and e”30 in 17.5%. Keller *et al*. (2005) observed on community-dwelling seniors that more than half (51.6%) of the participants were in the normal BMI category of 18.5-24.9, and only 3.5% were considered underweight, < 18.5- 3.5%; 25-29.9- 37.3% and >30-10.8%.

Velazquez alva *et al.* (2004) did anthropometric measures in an elderly Mexican men and women group and found mean Body Mass Index of men- 26.3 ±3.4 and women of 27.7± 4.2; mean Mid Arm Circumference of men 29.0 ± 2.9 women 29.8 ± 3.8. A study by Jensen *et al.* in Nashville found that BMI of < 18.5 in 1.8%; 25-24.9 in 26.9%; 25+ in 71.3% (Cairelle *et al*., 2005). In a Canadian study, 13% of patients were found to be mildly malnourished, whereas 6% were malnourished (Chevalier *et al*., 2008).

As we are concerned about the diet of an elderly person, we can apply some practical tips to ensure he or she is getting proper nutrition like- offer nutritionally-dense foods, enhance aromas and flavors, make

eating a social event, encourage healthy snacking, consider government assistance, home-delivered meals, adult daycare, nutrition education, door-to-door transportation, and financial assistance programs as available to people over the age of 60 who need help.

Good nutrition and physical activity are health-promoting lifestyle approaches in the elderly population. New dietary guidelines for the elderly should emphasize the value of high quality, nutrient-dense foods. This approach will require new efforts in consumer education sensitive to the needs and beliefs of older people (Volkert *et al*., 1991).

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Ageing and Spirituality: Understanding some Constructions and Perceived Influences

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ABSTRACT

This paper is based on a study of 906 ageing respondents in Mumbai, on their constructions of meaning of spirituality, spiritual beliefs, practices, experience and perceived influences of spirituality on various dimensions of the ageing process. Constructions of spirituality such as the Gnostic view, transcendental view, theological understanding, non-religious spiritual propensity, sociological, psychological and social psychology perspectives, surreal conceptions and syncretic views were unearthed. Spirituality was also perceived to be a congruent meaningful life scheme, an inexplicable complex construct and as a communion with God. Categorisations of spiritual beliefs about self-divine connections, self-world exchange, self-absolute self synergy and self-ethical self mirroring were outlined by ageing respondents. Domains of spiritual practice such as altruism, positive coping, relationship maintenance and realistic acceptance of the ageing process were discerned. Similarly spiritual practices unveiled experiences of the divine and rendezvous with the Absolute Being in near death experiences. Differentials existed on all of the aforementioned counts on the basis of background characteristics. Spirituality was perceived to provide support, aid relationship building and maintenance, facilitate coping with stress and ideas and issues in relation to death and dying. Further it was also viewed as enabling deconstruction of popular notions of ageing, provide a pathway to soul liberation and detachment/ disengagement as a precursor to well being in late life. The study submits that the findings have implications for epistemology of social gerontology in terms of insertions of spirituality facets and for praxis in terms of cognisance of the quintessentiality of spiritually inclined social work practice with ageing individuals.

Key Words : Ageing, Spirituality, Spiritual Beliefs, Practices and Experiences, Influences of Spirituality.

Within the context of population ageing, the variegated genre of discourses have focussed on dimensions such as issues, well-being propensities and modalities of existential actualisations – spirituality and religiosity being crucial titans. Particularly in the western context, there is a spate of literature on religion, religiosity and spirituality and the ageing process commencing with longitudinal studies by Blaser and Palmore (1976) on religion and ageing to recent studies by Reiser *et al.* (2005) and Fischer *et al.* (2007) on spirituality and self-assessed well-being among older adults.

Earlier literature on ageing has conceptualised religion-religiosity-spirituality interchangeably – with boundaries among each concept reasonably blurred and fuzzy. Latter studies from 1990s onwards have demonstrated a tilt towards the construct of religiosity – implying the ephemeral aspects of religion beyond symbology, mythical domains and ritualism. It has been cultivated as a propensity towards the divine and the self and Absolute Being exchange relations (Zinnbauer *et al.*, 1997). The current decade has seen a convexing of conceptualisations to the domain of spirituality in ageing related discourses (Markides, 2007).

In the Indian context, within the religion-religiosity-spirituality and ageing connections, some explorations on extant textual traditions and discourses relating to ageing, death, dying and afterlife have been made (Tilak, 1989). Philosophical works on transcendence in late life (Ghosh, 1954; 1956; Mukherjee, 1975); critical commentaries on textual traditions in Indology (Arapura, 1973; Mehta, 1978; Ramachandran, 1985); post 'modernity' explorations on references in Indic religio-spiritual traditions on the ageing process (Chattopadhyay, 2008; Biswas, 2008; Bhatnagar, 2008) and sociological discourses on the renouncer traditions in late life from the Dumontian perspective (Madan, 1982; Heesterman, 1982) dominate the scene. Empirical explorations on the

ageing-spirituality connections in the indigenous context have been minimal, particularly in the contemporary ageing literature. The positive correlation on coping with the ageing process and spirituality as established in the western literature has not seen parallel affirmations in the Indian context.

This paper is developed from a study that attempts to understand ageing and spirituality through construction, engagement and influences in the indigenous context. The arenas of exploration are the meaning of spirituality for the ageing; spiritual beliefs, practices and experiences and the perceived implications of spirituality on the various dimensions of the ageing process.

Theoretical Framework

The theoretical framework of the study has drawn from varied conceptualisations on ageing, spirituality, religion and religiosity. There exists a body of theorisation falling within the realm of religious gerontology (Van Tassel, 1979) which encompasses within its fold dimensions and measures related to religiousness, religiosity and spirituality in connection with the ageing process (Markides, 2007) Within the broad realm of ageing and social theory the extant conceptualisations that provide a theoretical basis include: the structural functionalist lens; the lens of positive psychology; the phenomenological domain; the humanistic psycho-social lens; social construction of divinity and the feminist lens. Further the critical theory lens endows the faculties of reason and critique into the discourse and the postmodern lens celebrates differentials.

The disengagement and activity theory conceptualisations within the structural functionalist lens provide spaces for spirituality connotations. Similarly for positive psychology, there are conceptualisations from gratitude researches and within the phenomenological domain is the discussion on the spiritualisation of health beliefs. The humanistic psychosocial lens has examined several dimensions of the religiosity-spirituality-health connections. Two strands of conceptualisations prevail here – one, examining the religiosity-health connections through religiosity orientations and buffer effects literature; and the second, focussing on scales to understand the measurement of

religiousness/ spirituality. Within the ambit of social construction is the discussion on the sense of divine control and its relationships with self concept among the ageing. The feminist lens in ageing-spirituality discourses propose new readings and interpretations of theology, 'sacred text', history, symbol, ritual and spirituality discourses and have a(con)spired to institute women's visibility within religio-spiritual traditions. Religio-spiritual norms/ forms are analysed through a feminist prism and gender is considered to have a significant impact on the infrastructure of spirituality.

Survey of Literature

The global context has presented several studies on ageing, religiousness, religiosity and spirituality. The period from 1975 – 89, the first part of the post 'modern' era signified by the 'modernisations'. The last phase has seen the rise of the public face of religiousness/ spirituality, relegated to the private realm by Enlightenment rationality. This has manifested in several studies in the realm of psychology and demography looking at religiosity and ageing. The first such study was by Blaser and Palmore (1976) which was a longitudinal study that examined how religious leanings increased with age, as age related psychosocial coping prompted elderly to reach out for psychosocial support systems. Subsequently studies by Steinitz (1980); Gray (1982); Rosen (1982); Doka (1985 – 86); Rowles (1986); Quinn and Reznikoff (1985); and Taylor and Chatters (1986) have examined various nuances of the religiosity-ageing connection in the US and European contexts. Idler's (1987) study was the first one to focus specifically on religious involvement and health of the elderly in North Carolina using a fairly large sample. Such genre of impact studies have further been conducted by Young and Dawling (1987); Jarvis and Northcott (1987); Koenig (1988 a); Koenig, *et al.* (1988) and Koenig *et al.* (1988 b). Krause and Thanh van Tran (1989) have studied as to how religious involvement plays the role in reducing stress and promoting subjective well-being among older people in Michigan. Levin (1989) has viewed the connections between religion-ageing-adjustment-health using multinomial regression of data obtained through a survey of British elderly.

Literature from 1990 – 99 has further dwelt on the influence of religiosity/ spirituality on the health and well-being of the elderly. Although conceptual demarcations and theoretical sophistications were in the nascent stage, the range of studies have revealed the growing interest in the religion/ spirituality and ageing connections. This literature has also been inspired by the 1990 White House Resolution in the US giving importance to faith and faith-based initiatives in the public realm. Some significant studies have been conducted by Anson, *et al.* (1990); Pressman, *et al.* (1990); Fry (1991); *et al.* Morris (1991); Taylor and Chatters (1991); Wells and Zarit (1991); Ainlay, *et al.* (1992); and Holt and Dillman-Jenkins (1992). Heriot (1992) has examined the connection between spirituality (as a complex construct emerging from ephemeral aspects of religion) and ageing from a treatment and care standpoint. Koenig, *et al.* (1993) have examined the connections between religiosity and anxiety among elderly respondents. Subsequently Levin (1994) has explored the connection between religiosity and well-being of the elderly from the social epidemiology point of view. Levi *et al.* (1994) have analysed data from four pan US General Social Surveys in 1988, 1990 and 1991 respectively (conducted by University of Michigan, Utah and Kansas) and explored the religiosity dimension among the elderly respondents. Atkinson and Malony (1994) have examined the religious maturity and psychological distress connections in a study of older Christian women in New Jersey.

Studies on the connections of religiosity and spirituality to death anxiety among the elderly have been conducted by Bond (1994); Koenig (1994); Rasmussen and Johnson (1994) and Ellison and George (1994). Stress alleviation through religiosity leanings has been discussed by McFadden (1995); Pargament, *et al.* (1995); Johnson (1995); Koenig (1995 a) and Levin (1995) with reference to elderly subjects. Concepts of positive ageing and implications of self-esteem intertwined with religiosity have been discussed in studies by Krause (1995); Oxman, *et al.* (1995); Moberg (1995); Filterman and Koenig (1995); McFadden (1996); Musick (1996); Kennedy, *et al.* (1996); Levin (1996); Ellison *et al.* (1997); Braam, *et al.* (1997); and Idler and Stanislav (1997a and 1997b). Atchley (1997) has examined the effects of subjective religiousness on health and well-being among the longitudinal panel

participants over a period of 14 years in North Carolina. Such connections have further been explored by Ory and Lipman (1998); Krause (1998); Deiner and Suh (1998); Knapp and Hughes (1998); Musick, *et al.* (1998); Koenig *et al.* (1998); Wong (1998); Ellison and Levin (1998); and Koenig, *et al.* (1998). Imamoglu (1999) has examined the correlates of religiosity among Turkish elderly subjects. Koenig (1998) has studied spirituality through the lens of God conceptualisations and relationships of beings to the Absolute Being among US elderly. Tornstam (1999) has studied the concept of late life transcendence among elderly (aged 65+) in New York. Black (1999) has undertaken a qualitative study of spirituality and elderly women and Clark, *et al.* (1999) have undertaken a longitudinal study of religiosity and mortality risk among older adults in Pennsylvania.

Literature in the current decade has been more rigorous, post the International Year on Older Persons and there exists a greater conceptual clarity on spirituality in the international academic scene, wherein disciplines such as psychology, sociology and philosophy operationalised the understanding of spirituality for their respective epistemologies. Mitchell and Weatherly (2000) have studied the importance of church attendance and participation with regard to the health and functional ability of the aged. Musick, Traphagan, Koenig and Larson (2000) have studied the linkage between spirituality (operationalised as transcendental notions of being-other being connections) and physical health from the lifespan/ human development standpoint of older adults in Florida – as a part of an ongoing study on spirituality and adult/ human development. Traphagan (2000) has, from an anthropological point of view, explained the importance of cultural diversity to study the importance of religious beliefs and practices on the health of the elderly in Africa. Farther *et al.* (2000) have analysed the correlates of death anxiety among elderly in Philadelphia as a part of a larger project on death attitudes and older adults. McFadden (2000); Pargament *et al.* (2001); Chatters *et al.* (2001); Shlonik *et al.* (2001); Braam *et al.* (2001); and Wink and Dillon (2001; 2002; 2003) have studied aspects of spiritual development across the life course – late life being associated with enhanced spiritual motivations.

Other significant studies exploring various domains of the religiosity-spirituality-ageing connections are by Jacobs and Giarelli (2001); Idler, *et al.* (2001); Koenig (2002); Krause (2002; 2002d; 2003); George, *et al.* (2002); and McFadden (2003). Using the religion and spirituality items to measure religiousness/ spirituality developed by the Fetzer Institute (1997), Krause and Ellison (2003) have studied elderly in Michigan state to measure psychosocial well-being particularly through the lens of forgiveness – by God and of others. Other domains include spiritual well-being, history, affiliation, experience, beliefs and values. Further dwellings on spirituality-health-subjective well-being have been through studies by Benjamins and Brown (2003); Ardelt (2003); Falkenhain and Handal (2003); Masters, *et al.* (2004); Daaleman, *et al.* (2004); Koenig, *et al.* (2004); Wink and Scott (2005); Benjamins (2005); Masters, *et al.* (2005); and Schieman, *et al.* (2005). Marks *et al.* (2005) have measured the connection between religiosity and longevity and Ardelt and Koenig (2006) have linked spiritual activities to subjective well-being and death attitudes among older adults. Studies within the qualitative paradigm have been conducted by Trinitapoli (2005); King, *et al.* (2005) and Traphagan (2005) exploring some facets of spiritual consciousness among the ageing.

There are approximately ten studies in the Indian context examining various aspects of spirituality/ religiosity and ageing. Historical linkages with the textual traditions on religiosity-ageing have been sought by Chakraborti (1973) and Bhagat (1976) and Sharma (2000) and Singh (2003). Ushashree (1992a and 1992b) has, through a survey of elderly in south India and Britain highlighted that spirituality/ spiritual leanings are core dimensions that enable elderly to deal with frustrations and stress associated with ageing. This was furthered in an institutional study on religiosity as a contributor to meaning in life by Ushashree and Basha (2003). Jain and Sharma (2004) have researched that the productive engagement in work combined with high religiosity in old age can have an impact on the quality of life of older people through a sample of older population drawn from the city of Jaipur. Jain and Sharma (2004b) have further extended their analysis of the religious elderly looking at the dimensions of productive engagement in work on perceived death anxiety. Chakrabarti (2008) has undertaken an empirical study on spirituality and ageing in West Bengal. The results have shown

that how with the advancement of age, the need for spiritualism increases with variations on account of the background characteristics.

Objectives of the Study

The specific objectives of the study are :

- To understand the concept and constructions of spirituality among the ageing persons
- To study the various dimensions of their spiritual beliefs, practices and experiences
- To comprehend the implications of spirituality on the ageing process as perceived by the ageing persons

Concepts and Constructs

The initial conceptual framework of the study has been constructed background characteristics as independent variables, the meaning and construction of spirituality and spiritual beliefs, practices and experiences as intermediary constructs and implications of spirituality on the various dimensions of the ageing process as a dependent construct. Background characteristics of ageing individuals comprise of age, sex, marital status, place of residence, education, religion, linguistic group, ethnic and caste grouping, occupational status, living arrangements, economic independence/ dependence, living arrangement, health status and Spirituality Index of Well-Being (SIWB) score developed by Frey *et al.* (2005) at the University of Kansas Centre.

The intermediary construct of meaning and construction of spirituality comprises of meaning of spirituality, spiritual beliefs, practices and experiences. The various conceptualisations of spirituality extant in literature are the Gnostic view, transcendental view, theological understanding, non-religious spiritual propensity, sociological perspective, psychological perspective, social psychology perspective, surreal conceptions, syncretic and amalgamated views and life scheme and self-efficacy viewpoints.

The Gnostic view proposes that spirituality is about divinity and divine beings and the transcendental view consists of explanations in spirituality as to asking major existential questions (Canda and Furman, 1999).The theological understanding of spirituality proposes a set of beliefs in a divine being and manifestations of those beliefs. (McGinn,

1993; Nakasame, 2008). Non-religious spiritual propensity proposes that religion is not a fundamental belief system, but that all features of religiosity can take non-religious spiritual forms (Frey, *et al.*, Peyton, 2005). The sociological perspective on spirituality is congruent with existential orientations and described as giving expressions to our inner beliefs – a power that comes from knowing our deepest self/ selves and what is it that is sacred to us (Roof, 1993). The psychological perspective of spirituality posits that characteristics of spirituality within the domain of well-being (Pargament and Mahoney, 2002). The social psychology perspective on spirituality is the view of spirituality/ religiosity (mostly the terms in this vein of literature are used interchangeably) as a coping mechanism (Pargament, 1997). Surreal conceptions of spirituality comprises of discourses on an unknown realm – an outer world that is beyond self (Cox, 1996; Shea, 2000). The syncretic and amalgamated view on the other hand proposes that spirituality is about divinity and about self and tied to attributes of personal meanings that have a positivistic characteristic (Shea, 2000). Further, *et al.* (2005) have conceptualised spirituality as a congruent meaningful life scheme and high functional self-efficacy beliefs that synergistically promote personal agency.

Spiritual beliefs as proposed by Stewart (2000) are about self-divine connections, self-world exchange and self-Absolute Self synergy. Spiritual practices demonstrate the tangible turn to the ephemeral discourses on spirituality (Zinnbauer *et al.*, 1997). Altruistic/ generous notions in dealing with self and others, a global view of self (self as a miniscule entity in the vast world), empathetic conceptions of others and a sense of positive coping with life's stressors and the world by attributing stress as a part of life and death and dying as inevitable phenomena; are some manifestations of spirituality in practice.

The concept of spiritual experiences is a realm of the unknown and a matter entirely attributed to subjective experiences. Spiritual experiences are transcendental experiences largely concerned with an alignment/ proximity to the Absolute Being or God. Although adequate conceptualisations on spiritual experiences are not evident in literature, some domains can be drawn from Aquinas' theocentrism, Kantian rational theology and Heidegger's existential hermeneutics. In the

indigenous context, the six philosophical schools and in particular, Vedanta has given pertinent insights into the nature and flavour of spiritual experiences.

The dependent construct of perceived implications of spirituality on various dimensions of the ageing process comprises of support; relationship building and maintenance; coping with changing roles and activity engagement/ disengagement; coping with stress and anxieties of late life; deconstruction of popular notions of ageing for self and others; and coping with ideas and issues in relation to death and dying.

Methodology

The study has aligned to the quantitative paradigm with survey as the research design. A total of 906 respondents were identified through a procedure of simple random sampling from a universe of ageing members in the city of Mumbai possessing senior citizen identity cards. Of the initial sample of 2624 respondents identified through a process of random sampling (using random number tables), a contact was established via telephone/ personal visits to ascertain their willingness to participate in the study. Only 2012 respondents responded positively to the initial contact. To bridge the gap, further 612 respondents were identified from the list by random number tables, of which also only 536 respondents responded positively to the initial contact. Hence the initial sample of respondents who seemed amicable at the first contact was 2548. Of the 2548 respondents only 906 agreed to further participate in the study in terms of dialoguing on the interview schedule with the investigator. The response rate, keeping the initial sample size in mind, for the study was thus 34.52 percent.

Data was collected through an interview schedule containing a combination of close-ended and open-ended questions. Questions were posed on background characteristics, meaning and construction of spirituality and implications of spirituality on various aspects of the ageing process. The Spirituality Index of Well-Being Scale was also utilised along with the interview schedule. This index was developed for health and ageing research and proposed cross cultural usage. Hence it was utilised to ascertain their sense of wellness/ wellbeing as well as it served to be a useful background characteristic for gauging differentials on intermediary and dependent constructs. Score range from 12 – 24

was labelled as poor, 25 – 36 as good, 37 – 48 as very good and 49 – 60 as excellent. Highest score by arithmetically adding all the responses would be 60 and the lowest as 12.

Quantitative data was suitably coded and analysed through SPSS. Qualitative data was manually coded and then conceptual categories were suitable assigned to enable electronic data processing. The analysis has been largely descriptive with the use of frequencies, percentages and cross tabulations. The intermediary constructs have been cross tabulated with independent variables and the dependent construct has been cross tabulated with independent variables and intermediary constructs to discern the differentials and variations therein. The following section presents key frequency tables with narrative descriptions on differentials arising through cross tabulations.

Major Findings and Discussion

Major findings have been discussed in terms of background characteristics, meanings/ constructions of spirituality and spiritual beliefs, practices and experiences. This construction of spirituality has also been reviewed in terms of differentials emanating on account of background characteristics. Similarly perceived implications of spirituality have been presented and discerned in terms of differentials on account of independent variables and spirituality constructions, beliefs, practices and experiences.

Table 1. Background Characteristics

Background Characteristics	Frequencies	Percentages
Age		
Young Old (60 – 69 years)	431	47.57
Old Old (70 – 79 years)	283	31.24
Oldest Old (80 years and above)	192	21.19
Sex		
Male	461	50.88
Female	445	49.12
Marital Status		
Never Married	132	14.57
Currently Married	491	54.19

Widowed	205	22.63
Divorced	63	6.95
Separated	15	1.66
Place of Residence		
Mumbai Island City	362	39.96
Mumbai Suburbs	544	60.04
Education Levels		
No Formal Education	46	5.08
Upto Primary Levels	112	12.36
Upto Secondary Levels	116	12.80
Upto Higher Secondary Levels	109	12.03
Graduate	223	24.62
Postgraduate and Above	148	16.33
Professional Qualifications	152	16.78
Religion		
Hindu	336	37.09
Jain	103	11.37
Buddhist	92	10.16
Parsi	60	6.62
Sikh	61	6.73
Christian	102	11.26
Muslim	63	6.95
Neo-religious leanings	41	4.53
Syncretic leanings	36	3.97
Others (Humanism/ No religion)	12	1.32
Linguistic Group		
Marathi	199	21.97
Hindi, Bhojpuri, Maithili	103	11.37
Gujarati	182	20.09
Sindhi	69	7.62
Tamil, Telugu, Malayalam, Kannada	141	15.56
Punjabi	29	3.20
Oriya, Bengali, Assamese, Manipuri	65	7.17
Tulu	34	3.75
Konkani	84	9.27
Ethnic and Caste Grouping		
General	559	61.70

SC	71	7.84
ST	52	5.74
OBC	224	24.72
Occupational History/ Status		
In service/ employed	203	22.41
Retired	416	45.91
Part time work	81	8.94
Homemaker	206	22.74
Economic Independence/ Dependence		
Fully independent	193	21.30
Dependent on spouse	314	34.66
Dependent on children	209	2307
Dependent on extended family	71	7.84
Partially dependent on spouse	26	2.87
Partially dependent on children	35	3.86
Partially dependent on extended family	23	2.54
Dependent/ partially dependent on institutions	35	3.86
Living Arrangement		
Living Alone	103	11.37
Living with spouse	301	33.22
Living with spouse and children	292	32.23
Living with children	104	11.48
Living with grandchildren	61	6.73
Living with extended family	21	2.32
Living in Institutions	24	2.65
General Health Status		
In good health	407	44.92
Occasional Illness	273	30.13
Chronic Illness	226	24.95
Spirituality Index of Well-Being Score		
12 – 24 (Poor)	71	7.84
25 – 36 (Good)	526	58.06
37 – 48 (Very Good)	295	32.56
49 – 60 (Excellent)	14	1.54
Total Number of Ageing Respondents	**906**	**100.00**

Table 1 has revealed that majority of the respondents were young old (47.57 percent) followed by old-old and oldest old. In the study, 50.88 percent of the respondents were men and 49.12 percent of the respondents were women. Majority (54.19 percent) of the respondents were currently married followed by widowed, single, divorced and separated respondents. Around 60 percent of the respondents resided in suburbs and the remaining in various parts of the island city. Most of the respondents had some education (only five percent had no formal education) and 57.73 percent had graduate and/ or postgraduate/ Professional level qualifications.

Majority of the respondents were Hindu, Jain, Buddhist and Christians. Other religious leanings included Parsis, Sikhs, Muslims, neo-religious and syncretic faiths. A fifth of the respondents were Marathi and Gujarati speaking and the sample contained a fair representation of respondents speaking other languages such as Hindi, South Indian languages, Punjabi, Oriya/Bengali. Roughly 60 percent of the respondents belonged to the general category, around one-fourth were OBC's and the remaining belonged to the SC/ST category. In terms of occupational history, majority were retired and some were homemakers and/or in service / part time workers. Roughly one-fifth of the respondents were fully independent economically and around 66 percent were dependent on spouse-children-others. Majority lived with family/ extended family and a certain percent were also institutionalised. Around 45 percent had good health, one-third had occasional illnesses and around one-fourth had chronic illnesses. The SIWB scores were skewed centrally – with a majority having a good/ very good score and hence SIWB scores could be said to adhering to normal distribution.

Table 2 presents the genre of meanings/ constructions of spirituality of ageing respondents. As cited in literature, the findings corroborated the Gnostic view and the transcendental view (Canda and Furman, 1999), theological understanding (McGinn, 1993), non-religious spiritual propensity (Frey, *et al.*, 2005), sociological perspective (Roof, 1993), psychological perspective (Pargament, 1997), social psychology perspective (Pargament and Mahoney, 2002), surreal conceptions (Cox, 1996; Shea, 2000), syncretic and amalgamated view (Shea, 2000) and

Table 2. Meaning and Construction of Spirituality among the Ageing Respondents

Meaning/Construction of Spirituality	Number of Ageing Respondents Proposing the Core Category (Frequencies)	Percentage
Gnostic View	66	7.28
Transcendental View	232	25.61
Theological Understanding	71	7.84
Non-Religious Spiritual Propensity	47	5.19
Sociological Perspective	16	1.77
Psychological Perspective	26	2.87
Social Psychology Perspective	73	8.06
Surreal Conceptions	202	22.29
Syncretic and Amalgamated View	28	3.09
Promoting Life Scheme and Self Efficacy Beliefs	91	10.04
Spirituality as an Inexplicable Complex Construct	24	2.65
Spirituality as Communion with God	30	3.31
Total	**906**	**100.00**

self-efficacy and life-scheme promotion. Two other aspects were revealed through the data – spirituality as an inexplicable complex construct (an aspect of enigma surrounding it) and spirituality as communion with God (a pure theistic theodicy oriented view in corroboration with Indic tenets of non-duality).

In general the transcendental view and the surreal conceptions predominated. Differentials existed according to background characteristics which can be highlighted as follows: For the young old the transcendental and surreal conceptions predominated. Among the old-old the social psychology and life-scheme and self-efficacy promotion aspect was predominant. The oldest old largely abided by the theological understanding, social psychology and surreal conceptions. A greater proportion of women adhered to the theological understanding vis-a-vis their male counterparts. Among the never married and the widowed,

the social psychology perception predominated. For the currently married it was a combination of transcendental and theological understanding. Transcendental, surreal and social psychology conceptions of spirituality increased with levels of education. At lower formal education levels, the theological conception predominated.

Further whereas majority of the Hindu respondents subscribed to the surreal conceptions, among the Jain respondents it was the transcendental view, among the Buddhists, a non-religious spiritual propensity was dominant, Sikh, Christian and Muslim respondents subscribed to the theological and social psychology conceptions. Among the general category and OBC respondents, the transcendental and the surreal conceptions predominated. For the SC and the ST respondents, the conceptions aligned to the non-religious spiritual propensity. The currently employed subscribed to the transcendental and the surreal views and those retired and homemakers adhered to the social psychology view – spirituality conceived as a support mechanism. Economic independence was positively correlated with transcendental and surreal conceptions. Dependence aligned more towards social psychology, psychological and communion with God perceptions. Hence the ageing respondents residing with family were able to possess actualised/ transcendental views on spirituality vis-a-vis those residing alone/ in institutions, feeding into social psychology view, psychological and communion with God viewpoints. Similarly good health and good/ very good SIWB scores enabled esoteric conceptualisations of spirituality. Else the support oriented, social psychology, inexplicability and communion with God conceptions, were dominant.

Spiritual Beliefs, Practices and Experiences of Ageing Respondents

Nine types of spiritual beliefs grouped under four categorisations extant in literature as self-Absolute Self synergy (Ghosh, 1954; Stewart, 2000), self-divine connections, self-world exchange and self-ethical self mirroring were discerned. The most prominent spiritual beliefs were: self as part of divine and divine as predisposing all existence followed by actualising self-divine alignments and supramental realisation as represented in Table 3.

Table 3. Spiritual Beliefs of Ageing Respondents

Spiritual Beliefs About :		Frequencies (Number of Ageing Respondents)	Percentage
I	**Self Divine Connections**		
	a. Self as part of Divine	212	23.40
	b. Duality between self divine	81	8.94
	c. Actualising alignments as core	136	15.01
II	**Self World Exchange**		
	a. Divine as predisposing all existence	181	7.84
	b. Harmonising social exchange presupposing divinity in all beings	71	19.98
III	**Self -Absolute Self Synergy**		
	a. Non Duality	62	6.84
	b. Supramental Realisation	107	11.81
IV	**Self- Ethical Self Mirroring**		
	a. Spirituality as a yardstick for deontological ethics	21	2.32
	b. Spirituality as a yardstick for teleological ethics	35	3.86
	Total	**906**	**100.00**

Combining conceptualisations given by Frey *et al.* (2005) data as depicted in Table 4 revealed the following conceptualisations on spiritual practices – majority professed practices which amounted to altruistic / generous notions in dealing with others (aspects of unconditional love and forgiveness); sense of positive coping with life's stressors (detachment and practical disengagement); followed by maintaining support for self by retaining relationships; realistically accepting the ageing process along with the ideas pertaining to death and dying; and showing a penchant for positive and productive ageing.

Table 4. Spiritual Practices of Ageing Respondents

Sr. No.	Spiritual Practices of Ageing Respondents	Frequencies (No. of Respondents)	Percentage
I	Altruistic/Generous Notions in Dealing with Others (Aspects of Unconditional Love and Forgiveness)	332	36.64
II	Sense of Positive Coping with Life's Stressors (Detachment and Practical Disengagement)	296	32.67
III	Maintaining Support for Self by Retaining Relationships with Significant Others	102	11.26
IV	Realistically Accepting the Ageing Process along with the ideas of Death ad Dying	89	9.82
V	Showing a penchant for positive/ productive ageing and productive engagement during old age	87	9.61
	Total	**906**	**100.00**

Spiritual experiences as depicted in Table 5 revealed aspects of divine interventions in the face of adversities and Absolute Being as the constant soul companion. This was followed by visualising white light at the time of meditation/ prayer, magicalism/ 'chamatkaar' and rendezvous with the Universal Being in near death experiences.

Differentials in beliefs, practices and experiences existed according to background characteristics. In terms of spiritual beliefs, a third of the old-old respondents proposed the key belief of self as part of the divine and among one-fifth of the oldest old the aspect of divine as predisposing all existence was primary. Greater proportion of ageing women held the teleological belief that their male counterparts. One-third widowed elderly held the belief that self was a part of divine.

Table 5. Spiritual Experiences of Ageing Respondents

Sr. No.	Spiritual Experiences	No. of Ageing Respondents (Frequencies)	Percentages
I	Divine Intervention in the face of Adversities	415	45.81
II	Absolute Being as a Constant Soul Companion	263	29.03
III	Visualising White Light at the time of Meditation/Prayer	91	10.04
IV	Magicalism –Chamatkaar or Getting the Unexpected	84	9.27
V	Rendezvous with the Universal Being in near death experiences	53	5.85
	Total	**906**	**100.00**

Among the currently married and never married respondents, the belief of divine as predisposing all existence largely prevailed. The belief that self was a part of divine increased with levels of education and the trend of duality conceptions was vice versa. Among the general category and OBC respondents also, self as part of divine belief prevailed. Duality aspects were prominent among SC respondents and the divine as predisposing all existence was prominent among ST respondents.

In terms of religion-wise differentials, Hindu and Jain respondents largely proposed self as part of divine conceptions and Muslim, neo-religious and syncretic faith adherents proposed the belief that divine as predisposing all existence. Economic and living arrangements independence/ partial dependence collided with self as part of divine beliefs and dependence on family and institutions was associated with beliefs of divine as predisposing all existence. With respect to health status, good health was associated with beliefs such as self as a part of the divine and divine as predisposing all existence. Occasional and chronic illness pre-empted beliefs of the order of duality, supramental realisation and actualising alignments as core. Further those with higher SIWB scores held prominent beliefs of self divine unity and divine as predisposing all existence.

In terms of spiritual practices, unconditional love and forgiveness (ULF) and altruism increased with age as also detachment and practical disengagement. Realistically accepting the ageing process along with the ideas of death and dying was prominent among the oldest old. Ageing men showed a greater penchant for positive and productive ageing than ageing women. ULF and altruism was dominant among divorced elderly whereas the widowed ageing respondents professed detachment and practical disengagement. For the single and the separated, maintaining relationships, was a prominent spirituality-driven practice. Hindu and Jain respondents largely proposed ULF and altruism as also Buddhist and Catholic respondents. Positive coping and detachment was prominent among Muslim, Sikh and neo-religious respondents. One-fourth of the Jain and Buddhist respondents also proposed practices pertaining to acceptance of the ageing process along with the ideas of death and dying. ULF and altruism was prominent among Gujarati speaking respondents as well as among those who belonged to the general category, retirees and homemakers. Economic and living arrangement related independence was also associated with ULF and altruism. Living in families/ institutions also entailed aspects of detachment/ practical disengagement. Living alone and /or in institutions, entailed practices of the order of maintaining support for self and relationship retention. Similarly good health and SIWB scores were associated with ULF and altruism and chronic illness with realistic acceptance of the ageing process along with ideas of death and dying.

In terms of spiritual experiences, among the young old it was divine interventions in the face of adversities and absolute being as a constant soul companion that was predominant. Among the oldest old rendezvous with the Universal Being in near death experiences existed. More ageing women proposed experiences of divine intervention and absolute being as a constant soul companion vis-a-vis ageing men. Apart from divine intervention across all marital groups, never married and widowed ageing respondents perceived the Absolute Being as a constant soul companion. Experiences of magicalism declined with education levels and transcendental experience of Absolute Being as constant soul companion increased with education levels. Among those retired and in part time employment, divine interventions in the face of adversities predominated. Economic independence/ dependence and living arrangements showed

that dependence was associated with magicalism prone experiences and healthy dependence (eg. With spouse and children) and independence was associated with transcendental experiences of Absolute Being as constant soul companion. Similar was the trend in terms of health status and SIWB score. Chronic illness was associated with rendezvous with the Universal Being in near death experiences.

Table 6. Perceived Implications of Spirituality on the various dimensions of the Ageing Process

Sr. No.	Perceived Influences of Spirituality on Various Dimensions of the Ageing Process	No. of Ageing Respondents (Frequencies)	Percentage
1.	Support	89	9.82
2.	Relationship building and maintenance in late life	74	8.17
3.	Coping with changing roles and activity engagement/disengagement	141	15.56
4.	Coping with stress and anxieties in late life	117	12.91
5.	Deconstructing popular notions of ageing for self and significant others	46	5.08
6.	Coping with ideas and issues in relation to death and dying	97	10.71
7.	Spirituality as facilitating the pathway to soul liberation	79	8.72
8.	Spirituality as facilitating detachment/ disengagement (a precursor to well-being in late life)	263	29.03
	Total	**906**	**100.00**

Table 6 proposes that in terms of implications, spirituality as facilitating detachment/ disengagement was most prominent followed by coping with changing roles and activity engagement/ disengagement; coping with stress and anxieties of late life; coping with ideas and issues in relation to death and dying; support; spirituality as facilitating a pathway to soul liberation (nirvân?a or moks?a); relationship building and maintenance in late life and deconstructing popular notions of ageing

for self and significant others. The findings thus largely corroborated the implication studies of ageing-spirituality in the western context with indigenous overtones of detachment/ disengagement and soul liberation.

Differentials on perceived implications were assessed with respect to background characteristics (as independent variables) as well as intermediary constructs of meaning of spirituality, spiritual beliefs, practices and engagements. With respect to background characteristics, data revealed that for the young old, spirituality had prominent implications for coping with changing roles and for the old-old it was detachment/ disengagement and for the oldest old it was ideas and issues in relation to death and dying. Ageing men viewed it as enabling coping with changing roles and stress and for women it was largely relationship building and maintenance as well as detachment/ disengagement. For the never married and widowed ageing respondents, the prominent perceived implication was detachment/ disengagement and support and for currently married it was prominently coping with changing roles and activity engagement/ disengagement.

Ageing respondents with no formal education viewed the implication predominantly as facilitating soul liberation. Aspects of detachment/ disengagement were prominent among those with higher levels of education as also coping with stress and changing roles. Further detachment/disengagement dimensions were prominent among Hindu, Jain, Buddhist and Christian respondents and those adhering to syncretic leanings. Rest of faith leanings proposed coping as a prominent implication. Relationship building and maintenance was prominent among Tulu, Marathi and Konkani speaking respondents, coping aspect was prominent among Punjabi and South Indian respondents. Among the South Indian respondents, aspects of soul liberation and coping with afterlife issues were predominant perceived implications. In terms of differentials by ethnic groupings, detachment/ disengagement was a prominent perceived influence among the general category respondents and coping aspect predominated among SC, ST and OBC respondents. For in service respondents, coping with stress and detachment/ disengagement predominated. For those retired coping with changing roles predominated. Homemakers viewed it as coping with stress, anxiety and detachment/ disengagement. Independence (economic and

living arrangement) accompanied perspectives of coping with changing roles and activity engagement/ disengagement. Living with family members and/ or being dependent on them was associated with perceptions of detachment and soul liberation, Further the perception of support was predominant from among those living alone.

Poor health and poor SIWB scores entailed perceptions of coping with death/ dying and soul liberation. Better health and better scores were associated with actualised ideas of detachment and deconstructing popular notions of ageing for self and others. Differentials in perceived implications by meaning of spirituality discerned the following aspects. Of those who had professed the Gnostic view, aspects of coping and detachment/ disengagement predominated. The transcendental view proponents largely perceived the implications as facilitating detachment/ disengagement. Within the theological understanding, coping and soul liberation were dominant modalities. The non-religious spiritual propensity as well as psychological perspective proponents perceived support and coping as key implications. Similar patterns were observed among those who proposed the social psychology perspective. Proponents of the sociological perspective aligned to notions of deconstruction. Surreality and syncretic views also aligned to coping related implications. Of those who proposed spirituality as enabling promoting life scheme and self efficacy aspects of relationship building and coping with changing roles were dominant implications. Of those who proposed spirituality as an inexplicable complex construct, aspects of coping with stress/ anxiety predominated. Beliefs of spirituality as communion with God were associated with implications of the nature of support and coping with changing roles and ideas and issues in relation to death and dying in late life.

Differentials on the perceived implications of spirituality by spiritual beliefs were as follows. The belief of self as a part of the divine was strongly associated with implications of detachment/ disengagement. For duality and actualising alignments related beliefs, support and coping aspects predominated. Divine as predisposing all existence as a belief system, had implications for detachment and coping with changing roles and activity engagement. Similarly harmonising social exchange presupposing divinity in all beings had implications for coping. Non-

duality and supramental realisation proponents leaned towards implications of soul liberation and facilitating detachment/ disengagement. Of those who proposed spirituality as a yardstick for teleological and deontological ethics and held parallel beliefs, close to 60 percent proposed the implications of spirituality to be enabling relationship building and maintenance in late life.

Spiritual practices of ULF and altruism were congruent largely with implications of coping. The practice of positive coping with life's stressors through detachment/ practical disengagement viewed neat parallels with implications of detachment/ disengagement. For those who consciously practiced maintaining harmonious relations, viewed spirituality as a clear source of support and in the face of death/ issues relating to death and dying, spirituality was visualised as a coping mechanism. Effects for positive coping reflected in implications of spirituality as lending the necessary support and enabling coping.

Proponents of spiritual experiences of divine interventions in the face of adversities viewed the implications of spirituality as lending support, enabling coping and facilitating detachment/ disengagement. Similar genre of responses were prominently perceived among those who had experiences of the Absolute Being as a constant soul companion. Among those who had experiences of white light at the time of meditation/prayer, approximately 60 percent of them professed the key implication of spirituality as facilitating detachment/ disengagement. Around half of those who had magicalism experiences proposed coping with changing roles as a key implication and one-fourth in the same genre of experiences proposed spirituality as facilitating detachment/ disengagement. Close to 60 percent of those who had experience of rendezvous with the Universal Being in near death experiences proposed the key implication of spirituality as enabling coping with ideas and issues relating to death and dying and around a third proposed spirituality as enabling soul liberation.

In terms of differentials in spirituality by involvement with spiritual organisations, one key area of differential among those who were involved and those who were not, was the implication of coping with changing roles and activity engagement/ disengagement. A higher proportion of those who were engaged with spiritual organisations,

viewed spirituality as enabling coping with changing roles vis-a-vis those who were not. In other domains, the proportion were equivalent – with dominant perceptions of implications being spirituality as facilitating detachment/ disengagement, lending support and enabling coping with stress. Another area of differential was implications for soul liberation. A higher proportion of those who practiced personal spirituality viewed implications of spirituality as facilitating soul liberation (probably personal meanings of spirituality built into analysis of soul transcendence and transmigration) vis-a-vis those who were engaged/ involved with spiritual organisations (a public manifestations of spirituality orientations).

Applications of Findings for Epistemology, Praxis and Further Research Implications

The findings have implications for the epistemology of social gerontology and for domains of practice. For epistemology, the study urges an incorporation of soci(onto)logical and hence metaphysical-philosophical discourses within the established theoretical frameworks of social and critical gerontology. Particularly in the indigenous context, the locus classicus of ageing-spirituality explorations, is, an appropriate balance of the text and the context. Further for paradigm dialogues, this study demonstrates a post 'modernity' insertion of faith-spirituality-theism related discourses into the public domain and not relegating the same to solely personalised constructions and private realms.

The findings of this study on ageing and spirituality have implications for practical engagement with ageing issues. Spiritually inclined social work practice can be used in working with ageing members, caregivers of the ageing and families of the ageing. Aspects of transpersonal practice would incorporate spiritual assessment, spiritually inclined interventions (incorporating aspects of transpersonal social work practice) and spirituality development and sustenance.

Further researches such as qualitative studies on the personal constructions of spirituality and its perceived influences by the ageing in the indigenous context can be constructed. The present study has been confined to the geographical limits of a megapolis. The analysis can be extended in terms of comparison between various regions/ cities as well as rural/ urban comparisons. Further in the international context, north-south comparisons may also unearth some significant differentials.

The present study has utilised descriptive analysis and an exploratory intent, primarily because few such studies have been available in the indigenous context. Further studies utilising the explanatory model – particularly involving forming and testing hypotheses so as to contribute to greater theoretical sophistication can be envisaged. Studies comparing the western model of transpersonal practice and the indigenous conceptualisations of Indic spirituality and its nuances and variations in ageing research can be undertaken.

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Who will Decide for the Rural Elderly in China Whether to Stay in Their Home or Move to a Home for the Aged ?

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ABSTRACT

This study examined the question: who will decide for the rural elderly in China whether to stay in their own home or move to a home for the aged? Will it be left to the old people to decide or to their children? The research groups included fifteen elderly people aged 70-80 and fifteen of their children aged 35-40. All participants lived in a village located about 500 kilometers from Beijing. To evaluate the parent's and the children's perceptions regarding living together and economic support in the rural areas, similar questions were presented to all participants. The research did not provide a definitive conclusion: for the children, the convenience of having their parents living with them is a significant consideration in their refusal to countenance their parents leaving the home. On the other hand, the parents present an economic liability and their staying at home makes it difficult for the children to become independent and move to a modern life style. From the parent's perspective, their desire to live with their children is decreasing but they are afraid to move to a home for the aged and leave the safe family framework.

Key words : Elderly; old age; decision making; children; home aging.

One of the major achievements of the 20th century was the increased rate of longevity in the world. Consequently, populations are aging worldwide and the number elderly in the general population in the future is expected to be much higher in most of the developing countries than in the developed countries (WHO, 1997a). All over the

modern world, adults, and especially the elderly, constitute the population group with the highest rate of numerical growth. For example, while in France it took the elderly population 115 years, from 1865 to 1980, to double from 7% to 14% of the total population, the same process will take only 28 years in China, from the year 2000 to 2028. Of the 1.2 billion people aged sixty and over who are expected to be living in the world in 2020, two thirds will be living in developing countries such as China, India, Brazil, Indonesia, Pakistan, Mexico, Bangladesh and Nigeria (WHO,1997a). For example, the population of the elderly (60 or older) in China is approximately 128 million, or one in every ten people, the largest in the world. It is estimated that China will have some 400 million people aged over 60 years by 2050. China has changed dramatically in recent years, including in terms of the family structure. In the traditional Chinese society, the elderly used to live with one of their children, and children were constantly reminded that they owe everything to their parents and that they must repay this debt in full. Nowadays, however, more and more young adults are moving out of the family home, leaving their elderly parents alone. Many of the young couples who live with their parents now do so not for the sake of family tradition but rather because they cannot afford to buy a house or rent an apartment.

Most middle-aged children have little time to look after their parents, let alone take care of them from the economic, medical and social aspects. The elderly need to make arrangements for their later years when their families cannot care for them. Following the increased longevity and the changes that have occurred in the traditional family, which involve all aspects of life, the question to be asked is: Who will decide for the rural elderly whether to stay in their own home or move to a home for the aged? Will it be left to the old people to decide or to their children?

The background to decision making

The quantity and quality of the decisions a person must or wants to make change according to the stages of life and are influenced by the social environment in which the person lives. Thus, people constantly face choices, and a considerable part of their mental energy is invested

in thinking about those situations about which he/she is required or chooses to reach a decision. In most cases, there is uncertainty, partial or complete, regarding the probability of the desired outcome and the amount of satisfaction involved. The decision maker does not possess full information about all the choices and their payoffs, and the more the decision involves long-term consequences, the more the amount of uncertainty regarding the meaning of its outcomes increases. Hence, almost any decision involving uncertainty includes risk taking (Einhorn & Hogarth, 1981).

The present study focuses on the influence of social ties on individual decision making. Who will decide for the rural elderly whether to stay at home or move to a home for the aged? Will it be left to the old people to decide or to their children? Naturally, the decision depends on and is influenced by the social environment in which the elderly live, on their economic situation, and on their health.

Affective and cognitive aspects of individual decision making

When the individual faces the dilemma of decision making, he/she is in a state of anxiety, especially regarding the risky alternative, which in our case is moving to an old age home. In a group setting (comprising family/professional staff) the elders' tension and anxiety are reduced, which allows them to reach a decision that previously had been feared. The rewards or punishments involved in the group composition, the personality of the individuals involved and what occurs during the group discussion can change the individual's decision regarding the risk level he/she is willing to embrace. Two hypotheses are included in this category: diffusion of responsibility and risk as a value. The major assumption underlying diffusion of responsibility is that the individuals in a group, and in the present case in the family, are willing to take greater risks and choose a more attractive alternative with lower chances of success, because the shared responsibility protects them in case that the results are negative (Kogan & Wallach, 1964). Actually, some studies indicate that a move toward taking a risk has occurred when the subjects watched or listened to a discussion. These findings demanded the expansion of the diffusion of responsibility hypothesis so that it would account for how subjects can share the responsibility for

decision making with people with whom they have no contact and who are not directly involved in the situation (Kogan & Wallach, 1964). Such an expansion was suggested by Kogan & Wallach (1967), who maintained that a feeling of relief and reduced anxiety could result not only from a shared decision but also from the existence of emotional ties between the group members.

The second hypothesis that of risk as a value was suggested by Brown (1965). It assumes that risk taking is a value in the Western culture and therefore risk taking is more desirable in terms of the prevailing norms than hesitancy and caution. Brown (1965) claimed that people tend to assume that their personal position regarding risk taking in certain situations is compatible with the acceptable social value of risk taking. When individuals are exposed to group discussion, they discover that they actually took a smaller risk than other members in their group. This social comparison makes them change their mind when they are asked to make their decision following the discussion. They change their initial decision so that it will more closely resemble what they "discovered" as an accepted social value that is, taking greater risks. To take into account the dilemmas in which people tended to be cautious, Brown revised the hypothesis, claiming that any problem involving a risk raises accepted cultural values in favor of the risky alternative, or in favor of the cautious alternative. He maintained that in some situations, culture attaches great value to hesitancy and conservatism, such as in China. Traditionally, grown children took care of their parents when they became old. About 70 percent of China's elderly people, particularly in rural areas, live with their children or relatives.

Research population

Fifteen elderly people aged 70 to 80, 8 males and 7 females, living in a village about 500 kilometers from Beijing. The elderly people lived with their family relatives, taking care of the house and their grandchildren. Fifteen children aged 35 to 40, 8 males and 7 females, married with children; however, each family has only one child. These subjects were working long hours and their old parents took care of the house and their grandchildren.

Research tool – questionnaires

Two questionnaires were used, one for the elders and one for the children.

Findings

To present the parent's and children's perceptions about living together and economic support in the rural areas, similar questions were presented to the parents and their children. Table 1 summarizes the main findings.

Table 1: Attitude questionnaire on perceptions regarding shared living of parents and children

	Yes	No
Would you like to continue living with your child/parents?	Parents: 38.9% Child: 66.7%	Parents: 61.1% Child: 33.3%
Would you like to move to another place, such as a home for the aged?	Parents: 50%	Parents: 50%
Would you like your parents to live somewhere else, for example with another relative or in a home for the aged?	Child: 57.1%	Child: 42.9%
Can you afford to move to a home for the aged?	Parents: 38.9%	Parents: 61.1%
Can your parents afford to move to a home for the aged?	Child: 64.3%	Child: 35.7%
Would you like to participate in activities such as Tai Chi, lectures and trips together with people of your own age?	Parents: 55.6%	Parents : 44.6%
Would you like your parents to participate in activities such as Tai Chi, lectures and trips together with people of their own age?	Child: 64.3%	Child : 35.7%

Would you like to move and live in a protected place, where you will be taken care of in terms of your health, social life, culture and safety?	Parents : 64.7%	Parents: 35.3%
Would you like your parents to move and live in a protected place, where they will be taken care of in terms of their health, social life, culture and safety ?	Child: 64.3%	Child: 35.7%
Are you taking care of your grand children?	Parents: 55.1%	Parents: 44.9%
If your parents wanted to move to a home for the aged, would you finance that move?	Child: 42.9%	Child: 57.1%
Would you prefer to continue to take care of your grandchildren?	Parent: 27.8%	Parent: 72.2%
Is it convenient for you to live with your parents? That they're helping you with the house chores? Taking care of the children?	Child: 64.3%	Child: 35.7%
Would you like to keep on doing the household chores?	Parent: 66.7%	Parent: 33.3%
Is the time you spend with your parents decreasing?	Child: 57.1%	Child: 42.9%
Do you support your children financially?	Parent: 22.2%	Parent: 77.8%
Do the young have less respect for the elderly?	Child: 57.1%	Child: 42.9%

Would you like to leave home for half a day and go to a day care center for the aged?	Parent: 22.2%	Parent: 77.8%
The pace of life is increasing, your work is more stressful - does it affect your relationship with your parents?	Child: 57.1%	Child: 42.9%
Would you like to move to another town?	Parent: 58.5%	Parent: 41.2%
Did you become accustomed to the change?	Child: 78.6%	Child: 21.4%
Do you think your children mind that you are living with them?	Parent: 22.2%	Parent: 77.8%
Is it difficult to get used to the change?	Child: 64.3%	Child: 35.7%
Would you like to decide whether to keep on living with your family or move to a home for the aged?	Parent: 27.3%	Parent: 72.7%
Do you consider it a burden that your parents are living with you?	Child: 71.4%	Child: 28.6%
In your opinion, can the family decide, in some cases, about the change or about moving to a home for the aged or to a day care center?	Parent: 55.6%	Parent: 44.6%
Is this a costly burden?	Child: 71.4%	Child: 28.6%

As can be seen from Table 1, the findings are not provide a definitive conclusion. For the children, the convenience of having their parents living with them is a significant consideration in their refusal to countenance their parents leaving the home. On the other hand, the parents present an economic liability, and their staying at home makes it difficult for the children to become independent and move to a modern

life style. From the parents' perspective, their desire to live with their children is decreasing but they are afraid to move to a home for the aged and leave the safe family framework. In addition, the parents were asked about their perception of old age and the elderly. Table 2 summarizes the major findings:

	Yes	**No**
Do you feel that the family members have less patience and respect for the elders in comparison with the past?	20%	80%
Did the pursuit of money and the long working hours lead to a change in the intergenerational relationships?	20%	80%
Does this change make you feel sad?	20%	80%
Could this change be avoided?	20%	80%

It can be seen that the parents do not feel any change in attitudes toward the elders and deny changes in the intergenerational relationships and the process of modernization in general.

Discussion

The main goal of this research was to find who will make the decision for the rural elders in China as to whether to move to a home for the aged or stay in their children's home: the elders themselves or their children. The results do not provide a definitive conclution. On the one hand, the children, who, as a result of the one-child policy were raised as "little emperors" and are used to seeing themselves as being in the center, would like to release themselves from the chains of tradition and move on and acquire education. They would like to send their parents to a home for the aged in order to make things easier for themselves. Nowadays, they have started to consider their parents a "burden" and not as an "asset", as they did in the past. On the other hand, for elderly people, the decision to enter an institution is usually the result of complex interactions which involve not only themselves but also professionals and family members. Traditionally, grown children took care of their parents when they became old. About 70% of China's elderly people, particularly in rural areas, live with their children or other relatives. Because of the one-child policy, elderly people will have

fewer children to take care of them in the future, and by 2024 it is estimated that a third or more of retired Chinese parents will have no living sons whose traditional duty was to support elderly parents. These days many children do not want to shoulder the burden of taking care of their parents or don't have room in their homes. In some cases children are shirking this responsibility. Many villages across China are already filled with old people, and the proportion of elderly living alone and/or suffering from depression is rising. There are even stories of elderly people being abandoned in hospitals or suing their children for financial support.

Conclusion and recommendation

In summary, the decision about moving to a home for the aged depends on several factors and is not unequivocal by any means. Does the elder have the money to move to a home for the aged? How does he/she feel health-wise, and what kind of a relationship does he/she have with his/her children? Also, do the family members have the economic and physical ability to live with the elderly and provide for an extended family? The decision in the rural areas about making a change in the elders' situation and that of their families depends primarily on the decisions of the Chinese government. For example, establishing an old age insurance system in rural areas is an important response to population aging, family planning and the reversal of the birth sex ratio in China. The decision to bolster rural healthcare and, as mentioned above, establish a better social security system has in the past been motivated by a single realization: many Chinese families are no longer adequately to provide for their older members.

While the average life expectancy is steadily increasing, China finds itself lacking in related areas: expert geriatric care, dementia and Alzheimer's diseases, and understanding of the psychological conditions of the elderly. After all the above mentioned parameters are taken into consideration, the decision whether to move to a home for the aged, attend a day care center, or stay at home will be made easier both for the elders and for their family members.

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A Life Course Perspective: The Aging Population and the Usage of Technology to Maintain Independence

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ABSTRACT

Technology can make an important contribution to the safety, security, independence and quality of life of the aging population. The successful adoption of technology is becoming increasingly important, especially for maintaining independence. However, the adoption of technology has not been successful due to issues that seniors encounter with using technology. The life course perspective can be used to analyze the senior's attitudes and usage of technology. This paper will focus on the life course of the aging population, their attitudes and how past life experiences will determine if seniors will adopt new technology in order to maintain independence. These life course concepts can then predict future needs of those who are not yet old and how to influence the aging population that technology can allow them to maintain independence in old age.

Key Words: Life Course, Aging Population, Technology

It is estimated that by the year 2030, 22% of the population in the United States will consist of people over the age of 65 (Czaja & Schultz, 2006). The fastest growing cohort will be the 75- plus years age group. Currently, about 44.5 million people are over the age of 75, and by the year 2050 almost 50 million people will be 75-plus years of age (National Center for Health Statistics, 2005). Currently, the healthcare system cannot meet the needs of the growing aging population. As the population grows, there will be additional pressure placed on health care

professionals. Therefore, a method to deliver quality care to the increasing number of seniors needed to be developed. Recent developments in technology have been making an important contribution to the care of the elderly. The topic of aging and technology is receiving increased attention from researchers and policy makers because they believe the application of advanced technology is an important way to maintain and enhance an older person's quality of life (Czaja & Schultz, 2006).

According to Stein and Moritz (1999), aging can be defined as the "process of change in the biological, psychological and social structure of individuals**."** Aging is a normal process that affects the well being of every person in some way. As one ages, physical tasks become challenging. Despite these challenges, most elderly want to continue doing these daily activities. Along with performing these activities, most elderly want to age in place. They prefer to remain in their homes as they age because they want to be independent. Living at home allows elderly people to maintain independence and be in control of their lives. Maintaining independence is a priority among the aging population (Cordingley & Webb, 1997). Since independence is highly valued, the loss of independence is seen as problematic (Czaja *et al.*, 2006). In a recent study, *Aging in Place in America*, Price examines the attitudes and anxieties of the nation's elderly population. Prince concludes that seniors fear moving into a nursing home and losing their independence more then death (Prince, 2007). Studies of the process of aging have shown that adopting technological advances can ensure independent living and improve quality of life. The successful adoption of technology is becoming increasingly important for functional independence. However, the adoption of technology has not been successful due to issues that seniors encounter with using technology. The life course perspective can be used to analyze senior's attitudes and usage of technology. This essay will focus on the life course of the aging population, their attitudes and how past life experiences will determine if seniors will adopt new technology in order to maintain independence.

According to Binstock and George (2006), Understanding the life course is about describing individual and collective experiences and statuses over long periods of time and explaining the causes and consequences of the patterns that develop. It is also about addressing a

range of social, historical, and cultural forces that determine the structure and content of life experiences and pathways (p. 3). Science will be more accurate if developmental influences are addressed at multiple levels of analysis and the interactions are understood over time (p. 5). Understanding the life course is important because it can lead to answers to current problems as well as predict problems that can occur in the future (p. 5).

Life Course Perspective

Urie Bronfenbrenner, an international renowned behavioral scientist in the field of human development, developed the ecology of human development, which analyzes the characteristics of the person and the environment (Moen *et al.,* 2001, p. 5). The ecology of the life course addresses the person-process-context-time (PPCT) model, which are key components of the life course perspective (Moen *et al.,* 2001, p. 6). The ecology of human development and the life course models are important factors that shape an individual's life path.

According to Binstock and George (2006), the life course perspective is a framework of common elements that can guide research (p. 4). It is a device that can assist in coordinating research, communicating, interpreting research and combining gained knowledge. The life course perspective can be used to guide this type of research study. Seven major concepts will be used to apply the life course perspective to this area of study. The seven concepts are trajectories, transitions, turning points, culture and contextual influences, timing in lives, linked lives, and adaptive strategies (Wethington, 2005). These concepts will be used to better explain the events in a person's life. It will also be used to determine the effect a person's past life experiences has on the adoption of technology to maintain independence.

Previous studies have concluded that new technology can be beneficial for the aging population. The aging population must recognize the need for technology and realize that it can be more beneficial than traditional methods of care. Through the life course perspective, researchers are attempting to understand why the adoption of technology has not been successful. Researchers believe once the aging population utilizes technology, the aging population will be able to maintain independence and improve their quality of life.

Attitude, expectation, usage of technology and their desire to maintain independence are factors that determine if the aging population will adopt new technology. These factors can be influenced by gender, age, health status, education, occupation, socioeconomic status, life history, social environment as well as exposure and comfort level to new technology. All of these factors have shaped the individual's life course. It is important to examine how these factors characterize a person's life. It will also enable researchers to find a solution to the reason that the adoption of technology has not been successful. These life course concepts can then predict future needs of those who are not yet old and how to influence the aging population that technology can allow them to maintain independence in old age.

Concepts

The life course perspective is a framework used to understand the complexities of an individual's experiences (Willis & Reid, 1999, p. 4). This perspective is holistic and views the individual's lives in a broader context (Wethington, 2005). "The life course perspective demonstrates how social conditions and change effect attitudes, choices, and the health of individuals" (Binstock & George, 2006, p. 4). Through the key concepts of the life course, this perspective will provide "insights to understanding the relationship between historical time, social context, and changes in the population over time" (Wethington, 2005). The key concepts of the life course include trajectories, transitions, turning points, cultural influences, timing in lives, linked lives, and adaptive strategies. Each concept will explain how it has influenced the aging population's attitudes towards technology.

Trajectories refer to stable patterns of behavior or health across time (Wethington, 2005). Willis and Reid (1999) explain that trajectories are patterns and types of roles throughout adulthood (p. 9). These patterns are critical in understanding the lives and choices of individual's in their middle years (Willis & Reid, p. 9). Each person experiences many different stages of life. Breaking up their life in different stages is the easiest way to explain events and experiences in their life. Life experiences in early life can have an effect on an individual in later life. However, the experiences in adulthood are critical because by that point in time, one has matured and learned from past experiences. By the

time an individual reaches adulthood, they are confident and are able to make important life decisions. They make decisions based on a set of views and beliefs. Typically, it is difficult to change an adult's views. If an adult has a negative view towards technology then the adult will most likely have that same view in later life. Some might believe that technology is too difficult to use and will continue to believe it is too difficult to use in later life. Some might believe that video-monitoring devices invade a person's privacy and that is a negative aspect of technology. Therefore, they might be hesitant to use certain technological devices. Willis and Reid (1999) also express that "situational demands, opportunities, and barriers shape midlife choices and trajectories" (p. 9). During an individual's life, there may have been a situation in which a person did not have the time to learn how to use different forms of technology. An individual may have been busy with their career or as a parent and did not have the opportunity to experience new technology. Now later in life, an individual may be reluctant to learn or may not be comfortable using technology. Some may have anxiety using technology because of inexperience with these devices. Trajectories could have a significant impact on the usage of technology in old age.

Transitions are changes in social roles or responsibilities (Wethington, 2005). According to Moen *et al*. (2001), the most beneficial way to study lives in context would be to focus on the transitions that people make in the course of their development (p. 368). Each individual experiences changes in their life and these changes can influence their life course. A few of the many significant changes in a life course is when a person transitions from home to college, college to the working world, and the working world to retirement (Moen *et al.*, 2001, p.368). As a child living in their parent's home, they obey their parent's rules and tend to be influenced by their attitudes and behaviors. If their parents have a negative attitude towards technology, then it is possible that the children will have the same negative attitude towards technology. In this time period, it is important to note that technological devices were new. Therefore, the parent's lack of exposure to technology could be a reason that they may not have been as open to using it. Many individuals consider moving away from home and going to college as an important transition in their life. It is a time for them to become independent and grow. Many young adults want independence at that age. As one ages,

independence continues to be a priority. This could influence one's attitude towards using technology to maintain independence in old age. Another important transition is moving from college to the working world. This time gives individuals the opportunity to take experiences from college and bring them to adulthood. College students, who were exposed to technology, may see the potential benefits. Their exposure to technology could allow them to see that using technology is not difficult. It could also make them more open- minded. As an open-minded adult, one could retire and potentially use technology to improve their quality of life. Influences in childhood and adulthood can determine one's attitudes towards independence and using technology.

Turning points are "transitions that are major changes in ongoing social role trajectories" (Wethington, 2005). Moen, *et al*. (2001) defines a turning point as a time when one's life takes a different direction (p. 370). A major turning point in a person's life is when one makes a decision about their education. Decisions about their education will affect their career path. Educational attainment appears to be a critical point in the life course. According to Binstock and George (2006), "education provides the foundation for the accumulation of life course capital" (p. 135). Education is an important factor that shapes the life course. A person that has the opportunity to attend college and further their education has a better chance of being exposed to new technological developments. They have been able to use computers and other devices and have become comfortable using these devices. More importantly, they are able to see the advantages. An individual that has an education has the ability to obtain a career and will use technological devices at their job. This career can also lead to a change in their socioeconomic status. Since technology is expensive, only people who can afford it are able to benefit from it. Educational attainment and occupation may influence the adoption of technology in later life.

Cultural and contextual influences are events that can shape an individual as well as restrict changes (Elder, 1999, p. 318). Race, ethnicity, gender, and socioeconomic status (SES) can affect one's views towards technology. Most baby boomers experienced their childhood during the Great Depression. According to Binstock and George (2006), a child living in poverty can be affected throughout life. It can affect their life chances, which may then affect opportunities in old age (p. 323). Many

elderly did not have the chance to own new devices during childhood due to lack of resources. This can affect their views towards technology. They may believe that they did not need these devices during that time and still do not need to use them now. Expensive technology may be inaccessible to a person that lives on a limited, fixed income. This could create a "technological divide," which would then further social inequality between age groups (Binstock & George, 2006, p. 270). It is important to note that SES and race are related but not the same (Binstock & George, 2006, p. 324). Racism and discrimination in the US has resulted in current SES issues with minority older adults (Binstock & George, 2006, p. 325). This emphasizes that the lack of resources can impact accessibility of technology.

Timing in lives is a particular time in which the timing of an event and an individual's life course interact (Wethington, 2005). Elder (1999) explains that "the life course of individuals is embedded in and shaped by the historical times and events they experience over their lifetime" (p. 304). However, "the timing of an event may be more consequential than its occurrence" (Moen *et al.*, 2001, p. 114). The Great Depression occurred during the late 1920's. At that time, many older adults were experiencing their childhood. The Great Depression resulted in economic hardship and children did not have the opportunity to be exposed to technology. Families were trying to survive on what little they had. Food, shelter and clothing were necessities to survive. Other items were irrelevant.

The beginning of the age of technology is another important time. New advancements in technology were being made during older adult's childhood. However, new technological devices were expensive when it was first developed. Therefore, many families were not able to afford such devices. It is also important to note that computers and other devices were not available during their childhood. Technology that can maintain independence such as video monitoring, computers, SMART homes, and other assistive devices had not been developed. If these devices were developed during that time period, would the adoption of technology be successful now? Both of these factors should be taken into consideration when trying to find a solution to promote technology.

Linked lives are when a person depends on the presence, influence, or development of another person (Wethington, 2005). According to Minkler & Estes (1999), during the 1930's most women cared for their husbands or fathers and then in their later years they were cared for by their adult children (p. 115). During this time, the children may remember their grandmothers supporting and caring for their grandfathers or their grandparents being cared for by their own parents. Now as older adults, they may expect their spouses to support and care for them during old age. They are influenced by past life experiences. The idea of using technology instead of having a caregiver may not be appealing. The idea of isolation may also be an issue. A spouse/caregiver is a companion. They may depend on their spouse/ caregiver for assistance, comfort, companionship, etc. Minkler & Estes (1999), also states that caregiving had once been a women's role (p. 116). Women were responsible for caring for children and for aging or ill parents or relatives. They were motivated by moral and sometimes legal mandates (Minkler & Estes, 1999, p. 117)). The idea of replacing a caregiver with technology may not be appropriate to them since they were used to a different type of care. A husband and wife are linked, as are elderly and their caregivers. They provide a type of lifestyle for an elderly person that they may believe technology cannot provide for them. The influence and dependence of a spouse or caregiver may have an affect on the adoption of technology.

Adaptive strategies are decisions that people make to improve their health or well-being (Wethington, 2005). Wethington (2005) believes that individuals will select a behavior or direction that will maximize personal gain and minimize person loss. Older adults may feel that they are losing more if they adopt technology. Studies suggest that some concerns with technology have to do with privacy issues, causing isolation, and usability problems. Older adults may feel that these concerns are major issues for them. However, there are solutions to these concerns. Some may learn to adapt and understand that technology can make an important contribution to the safety, security, independence, and quality of life of aging people. As Elder (1999) states, adaptive strategies "can assist in understanding why some persons successfully adapt to challenging situations…" (p. 35). The elderly may "change their ways." The aging population may be affected by the new developments in

technology and their desire to be independent. After learning more information and becoming more aware of the positive aspects of technology, the aging population may adopt technology in the future.

Conclusion

According to Binstock and George (2006), technological developments have the potential to greatly enhance the well- being of older persons, compensate for health and mobility impairments, and promote social interaction and social support (p. 269). However, more studies are needed to understand the roles and challenges of technology in the lives of older adults. The life course perspective has been beneficial in understanding how past experiences may have influenced an individual's attitudes and usage of technology in later life. Using the life course perspective will help researchers have a better understanding of the factors that shape a life course. This information will enable researchers to find a solution to the reason that the adoption of technology has not been successful. These life course concepts can then predict future needs of those who are not yet old and influence the aging population that technology can be very beneficial. Technology can achieve two goals that older adults have stated is a priority: maintaining independence and improving their quality of life.

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Assessing the Impact of Old Age Security Expectation on Elderly Persons' Achieved Fertility in Nigeria

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ABSTRACT

Elderly support system has received increased attention in recent years and its impact on the elderly achieved fertility has further generated several public policy and academic concerns. This is addressed by examining the fact that due to the dearth of formal care for the elderly, the onus for the care of this class of people rest squarely on their children. This poses important public policy and academic questions on the welfare of the elderly. Multi-stage sampling procedure was used to select local government areas, enumeration areas and individuals for the study. In all, 810 respondents were interviewed. Logistic regression model was used to determine the net effects of the explanatory factors on the welfare of the elderly. The study found that indeed some of the elderly persons gave birth to certain number of children in expectation of old age care, minimum of six children as noticed in the studied population. Indeed education and religion are related to the family size of the elderly persons. Those with primary level of education are 4.3 times more likely to see high number of children as important source of old age security than those secondary level of education. In terms of religion, while Muslims are 1.8 times more likely to, those who are adherents of African traditional religion are 3.5 times more likely to have resulted to high fertility as an important source of old age security. The study concludes that there is the urgent need for the promulgation of old people's policy and a well-organised social security system catering all old persons.

Key words : Elderly, Achieved fertility, Old age security, Nigeria, Welfare.

The incipient decline in fertility in Nigeria, which is expected to continue unabated in the next ten to twenty years, as well as improved survival chances throughout the life cycle, imply that the coming decades will witness dramatic increases in the number of the elderly, that is, persons 60 years and above. Ageing of the population presents formidable challenges to developing countries, such as Nigeria, that are currently struggling with underdevelopment.

The attention of the international community has been drawn to this relatively recent but increasingly important demographic phenomenon. Thus, the World Assembly on the Elderly in Vienna, in 1982, made recommendations bordering on the elderly's health, environment and consumer protection among other issues. Likewise, the UN General Assembly, 1991, and the 1994 Cairo International Conference on Population and Development re-echoed concerns on elderly persons worldwide, and proffered measures for improving their lives, and that of the rest of mankind, within the framework of sustainable development.

The situation of the elderly in Nigeria is not quite different from what is obtainable in other Sub-Saharan African countries. In fact, it is only South Africa and Namibia that currently have a social security system where persons aged 60years and above are entitled to a monthly pension. The Nigerian elderly are disadvantaged regarding systemic support. Several factors are responsible for this. First, as mentioned earlier, demographic change is increasing the number and proportion of older persons, and thus the demand for social support. Second, development factors are changing social institutions with severe implications for the support for the elderly. For instance, the nature and structure of the family is changing as more young people leave agricultural employment, obtain education, enter the wage economy and migrate to urban areas. The implications of this change in the family structure on the well being of the elderly include over-reliance on formal support system, falling income, deteriorating health conditions, poor nutrition, isolation, and boredom.

The above tends to separate the young and middle age population from the old as the majority of elderly live in rural areas, where agriculture is the main occupation. Agricultural workers, either as subsistence workers or as workers in commercial agriculture, usually do not receive pension benefits or social security. As in most countries in the world, the family or the extended family system in Nigeria is the most important institution for older people care. As the development process changes traditional institutional structures, old people may receive less familial support than did prior generations.

The breakdown in traditional values in Nigeria, and continued rise of the nuclear family, and deteriorating economic conditions, have all resulted in declining family support for the elderly. Older persons, particularly in rural areas, do not have formal support systems to substitute for the withdrawal of family support. In Nigeria, social security benefits are provided only for a small category of workers in wage employment, and the family, the traditional support unit, is gradually shifting from being a production to a consumption unit.

In Nigeria, support for the elderly is still almost entirely provided by families, with the state providing little or no support system for them. Older women are more likely to suffer from disabling illnesses than older men and therefore have a greater need for support from caregivers and state services.

Because women frequently outlive their husbands, they experience a distinct drop in standards of living on the death of their spouse because much of their societal access to resources have been channeled through their spouse (Peil, 1992). This situation, true of the world's wealthiest societies, is exacerbated in African society where widowhood practices frequently absorb the bulk of wife/ wives resources, property ownership practices remove the roof over her head and entitlement to land on her husband's death and where lifetime earning and saving potentials have been weak in any case given the structure of society. This is more pronounced in Nigeria through the harmful traditional practices against women.

Over the years, modernization, industrialization and the accompanying strong western influence have brought about changes in the structure and socio-economic functions of the family in Nigeria. First, the massive rural-urban migration, often necessitated by the search for white-collar jobs, has resulted in the reduction of the relevance of the extended family system and the increasing isolation of the elderly. Secondly, the mutual obligations of the extended family system are being systematically eroded by the increasing emphasis on material success and individualism. Thirdly, the interdependence that was once the hallmark of the extended family is being replaced by emphasis on autonomy and independence of the nuclear family, consisting of a man, wife and children. Fourthly, access to knowledge through formal schooling has led to a reduction in the power and prestige given to the accumulated wisdom of the elderly. Their knowledge and experience are seen as not being directly relevant to the problems of the modern age.

Studies conducted in various parts of Africa have consistently reported that contrary to the fear that modernisation may have weakened children's commitment to caring for older parents, children still remained the bulwark of informal social welfare support to elders. This has been found to be the case in Ghana (Apt, 1994), Zimbabwe (Adamchak, 1991), Kenya (Cattell, 1990) and Nigeria (Togonu – Bickersteth 1987a, 1989; Peil, 1991, 1992). It has been suggested that an expectation of and a need for support in old age are important contributions to high fertility in West Africa (Caldwell, 1976). Parents are expected to "invest" in their children with the hope that such investment will yield dividends when the parent is old and requires assistance from the children. Hence, disabled children are viewed as "poor investment" and are often neglected by their parents (Bamisaiye and Di Domenico, 1983) while childlessness in old age has been linked to isolation, ill health and poverty (Peil, 1995).

In Africa, the care of older family members is falling on fewer children and the impact is felt most by those with the least resources. Poverty is a critical risk factor for older persons in developing countries

in general and widespread poverty within communities contributes to the stress felt by families (Gorman, 1997).

The theory of fertility decline put forward by Caldwell (1976) has relevance for the kinship exchanges, which are associated with traditional and western living arrangements for the elderly. The theory posits that wealth typically flows up to the oldest generations in traditional societies, whereas in western societies wealth flows downwards. Therefore, a large number of children make good sense in traditional society in terms of old age security. In developed societies, where raising children requires large financial outlays and social security provisions are a state concern, large families are not a requisite to financial well being in old age. However, Olusanya (1989) argued that the "gift of God principle" is a more powerful explanation of the pro-natal disposition of Yoruba and of their fertility level rather than the calculus of wealth transfer. Makinwa-Adebusoye (1991) took a mild position by concluding that some implicit support for the idea that African parents based their decision on family size at least to some extent on economic calculation. In sum, the quality of surviving children is an important factor in the well being of the elderly.

Therefore, what is the present status of the elderly in our society? What are the current socio-economic conditions of the elderly? How far has the family abdicated its responsibility towards the elderly? Is child-sex preference related to socio-economic status of the elderly? Is there a relationship between socio-demographic characteristics and desire to limit family size? These and other emerging questions would be probed into in the course of this study, using the Ijebu of south – western Nigeria as a case study

Methods

This study was conducted in Ijebuland. The Ijebus are spread into parts of South-Western, Nigeria. The 2006 census figureS put the population of Lagos state at 9,015, 781, out of which about 281,481 were Ijebu. Out of the 2,338,570 people in Ogun State, about 725, 299 were Ijebu. Lagos state had twenty local government areas. Of these, Ikorodu, Ibeju-Lekki and Epe local government areas are largely inhabited by the Ijebus. Ogun state has twenty local government areas,

with eight of them in Ijebuland. The Ijebu therefore are found in eleven local government areas of Lagos and Ogun States. The methods comprise the use of questionnaire, case histories and document analysis. Quantitative method was exhaustively used. Ordinarily, the structured interview helps to generate standardized information from a representative sample of a given population.

In order to ensure conformity to the principles of representative-ness, the sample size was determined statistically. The sample size determination formula developed by Frank-Nachmias and Nachmias (1996) is adopted in this regard. It is given as follows :

$$N=S^2/(S.E)^2$$

Where N = the desired sample size
S = standard deviation of the variables under study
S.E = standard error (error margin)

Two important decisions are necessary in order to use this formula: how large a standard error is acceptable and since the study involves more than one variable, is a sample that is adequate for one variable satisfactory for other variables? For the purpose of this study, a standard deviation of 1.2 was assumed. The assumption is that these variables are likely to possess similar standard deviation and may represent other variables included in the analysis as far as the degree of variability is concerned. Also, because of the desire to obtain a sample size that could produce dependable estimates of the population parameters, the standard error was fixed at 4 percent. This connotes that the risk of error in estimating the population parameters based on the sample data in the present study is four out of a hundred. In other words, the sample estimates of the population parameters are likely to be correct 96 times out of a hundred. This margin is perceived as acceptable in view of the 95-confidence level generally allowed in social science research. So standard deviation =1.2 and standard error = 4 percent (0.04). The sample size is therefore computed as follows:

$$N= (1.2)2 / (0.04)2 = 900$$

So the study sample size is theoretically put at nine hundred elderly in the study population.

A sample of elderly persons was drawn in the following stages :

Stage 1 : Simple random sampling technique was used to select 5 LGAs of Ijebu ethnic group from 11 LGAs in Lagos and Ogun States. Table 1 below shows the population and size of Ijebu by state. The lottery method of simple random sampling technique was employed here.

The selected LGAs are: Ikorodu LGA and Epe LGA (Lagos State) while Ijebu Ode; Shagamu and Ijebu North LGAs (Ogun State)

Stage two involved the stratification of each of the five selected LGAs into three clusters based on the residential patterns that reflect the socio-economic status of the residents. Each of the LGAs was stratified into an elite cluster, a transitional cluster and a traditional cluster. The elite cluster represented areas where only one family is living in a housing unit and the residents were of relative high income and better education. The transitional cluster was where families leave in rented apartments. The traditional cluster represented the indigenous areas, where people from the same lineage reside together in a housing unit.

The third stage involved the selection of clusters from the three residential clusters. Lottery method of simple random sampling was employed here.

The fourth stage was the selection of enumeration areas (EAs) in the selected clusters. EAs in the selected clusters are first listed before the selection of final EAs. An Enumeration Area is a statistically delineated geographical area carved out of a locality (or a combination of localities) with 500 people or less. The entire area of study has 1530 EAs (National Population Commission, 1994). Out of these 34 were randomly selected, using lottery method of simple random sampling technique; the 34 EAs represented 2.22 percent of the study areas.

The fifth stage was the selection of household from the selected EAs. Household was selected within each EA through household listing until the required sample of 25 households was obtained. The sampling interval used in selecting household varied from one EA to another because of the variation in the number of households in each EA. The

sixth stage was the selection of an elderly person to be interviewed in households with more than one qualified elderly persons. Each elderly person was randomly selected and in all 850 elderly persons were interviewed. The unit of analysis was the individual elderly.

Findings

Socio-Demographic Profile

Information provided by 810 elderly men and women is analyzed in this study. The sample is unequally divided between males and females (roughly two-fifths and three-fifths, respectively). The study decided to have more females than males in the sample because in the elderly group, we have more females due to socio-cultural factors for example more male mortality implies that there are more females. Also, a study conducted by WHO (1996) shows that women through their working life, have limited access to and control of productive resources such as land, credit and technology.

Table 1shows the important socio-demographic characteristics of the respondents. As regards place of residence, the study yielded about three-fifths of the respondents from rural areas and two-fifths from the urban areas. Age distribution reveals that roughly two – fifths of the respondents fall below age 65, another one-fifth above the 70 years of age, while about two-fifths of the respondents are between 65 and 69 years. The mean age for both sexes is 66.9 years, as shown in Table 1, 67.4 years among male respondents and 66.5 years among their female counterparts. Considering the crucial implications of age in this study, it is imperative to note that the nature of the distribution may not be unconnected with the fundamental problem associated with age reporting in developing countries. Such problems include people's ignorance of their actual age, because the society does not value the importance of age, and the tendency of some people to report themselves into younger ages.

Therefore, the option taken in most cases, particularly in rural areas, is to estimate the age for respondents on the basis of certain past events or occurrences. This, however, presents a serious epistemological problem. In the rural areas, due to early marriage, poor

nutrition, subsistence farming, and lack of adequate medical services, respondents wear out fast, making them look older than their actual age. Despite this, attempts were made at estimating their right ages. Yet the age distribution presented should be taken with some caution bearing in mind the ever-occurring issue of age misreporting in Nigeria. Nevertheless, the age distribution does not reflect any significant difference between male and female respondents; on the average, males are older than the females by about one year.

According to Table 1, it is evident that the majority of the respondents have some level of formal education. In fact, nine out of every ten of the males and four–fifths of the females have at least, primary education. The level of literacy is higher among the male respondents than their female counterparts. For example, about two-fifths of the females and only one-tenth of the males are illiterate. Also, the proportion of males who had some secondary education and above (about one-quarter) is higher than that of their female counterparts (about one-tenth). In all, the above educational pattern reflects the national pattern of literacy: It has been reported by the National Population Commission (NPC 2000) that while 66 percent of male population have had some level of education, only 57 percent of their female counterparts are of the same category. The religious affiliation of the respondents indicates that about two-fifths of both sexes are muslims. Half of the respondents were Christians while the remaining one-tenth belong to traditional Africa religion.

The marital status of the respondents is also presented in Table 1. More men than women were still in a marital union, about half and two-fifths, respectively. Clearly, elderly people desire to have someone beside them to provide assistance, reduce boredom and its associated health problems. The Table reflects that one out of every five male or female respondents were widowed; more female respondents (16.5%) reported divorce/separation relative to men (about 11%), which may reflect the different effects of polygyny on male and female. About one-fifth of male and female respondents, indicated that they remarried following widowhood or divorce. The level of divorce or separation

observed in this study is higher than the national average of 0.9 and 6.2 percent among males and females respectively (NPC, 1998).

Furthermore, the Table shows that the majority of the respondents are in polygynous marriages. About two-thirds of male and female respondents indicated polygynous unions. Those who reported monogamous marriage comprise just about one-third of men and one-fifth of women. The point to note here is that polygyny is more prevalent perhaps because of the spread of Islamic religion in the population, and because an Ijebuman or Yorubaman is polygynous in nature. The members of the extended family live under the same roof, and are more available for interaction than would otherwise be the case.

A related issue is age at marriage. It is apparent in Table 1 that women got married earlier than men. While about two-fifths of male respondents got married before or by age 24, about half of their female counterparts got married at the same age. The fact that the average age at first marriage among male respondents is 22.02 years and 20.94 years among female shows that women marry earlier than men. Also, the mean age at first marriage is lower in the rural areas than in the urban areas for both sexes (17.1 and 20.9 years) respectively.

Table 1 depicts the respondents' type of family. It is apparent from the Table that about three-quarters of the respondents live in extended family setting. This further corroborates the polygynous type of marriage found earlier in the analysis.

The distribution of the sample by number of surviving children shows that the majority of the elderly Nigerians surveyed in this study have large families, that is, families with more than four children. Indeed, more than three-quarters of respondents have more than 4 children, with one-tenth having nine children or more. The mean number of children for both sexes is 5.3. Caldwell (1976) asserts that one of the major reasons for high fertility in Africa is the need for social and economic security at old age. This corroborates the 2003 Nigerian Demographic and Health Survey, which put the total fertility at 5.7 per woman. This high fertility is one of the factors responsible for lower developmental efforts particularly in human resources sectors of health, education and employment.

The study examined the number of male children among the study population. It was found that only four percent had no male child at all, a quarter of them had two male children and another quarter had three male children. The mean number of male children for male respondents is 2.7 and 2.6 for female respondents. With respect to female children, only two percent had no female child at all. It was revealed that about one-quarter of them had two female children and three-tenths of them had three female children. The mean number of female children for both sexes is 2.7. The mean number of female children for male respondents is 2.6 and 2.7 for female respondents.

Table 1 reveals that one-third of the male respondents ever desired to have more children and three out of every ten female respondents ever desired to have more children. As a corrolary to the above, about three-quarters of the respondents are staying with their children.

Table 1 : Percentage Distribution of Respondents by selected socio-demographic characteristics, by sex

Characteristics	Male		Female	
	%	N=330	%	N=480
Study Area				
Ikorodu	24.9	82	26.0	125
EpeIjebu	22.1	73	18.3	88
OdeIjebu	19.1	63	18.3	88
NorthShagamu	19.7	65	16.5	79
Shagamu	14.2	47	20.9	100
Place of Residence				
Rural	55.8	184	65.8	316
Urban	42.2	146	34.2	164
Age				
60-64	40.3	133	43.3	208
65-69	33.3	110	38.3	184
70+	26.4	87	18.4	88
Mean	67.4		66.5	

Education				
None	13.9	46	20.0	96
Primary	59.7	197	66.9	321
Secondary	26.4	87	13.1	63
Mean	2.8		2.4	
Religion				
Roman Catholic	17.0	56	14.6	70
Protestants	24.8	82	31.7	152
Islam	43.9	145	39.7	191
Traditionalists	12.4	41	12.3	59
Other (Christians)	1.9	6	1.7	8
Marital Status				
Married	51.5	170	44.0	211
Widowed	20.0	66	21.0	101
Divorced/Separated	10.9	36	16.5	79
Remarried	17.6	58	18.5	89
If Remarried, Why?				
Widowhood	11.8	39	11.0	53
Divorced	6.1	20	7.3	35
Not Applicable	82.1	271	81.7	392
Type of Marriage				
Monogamous	33.3	110	32.1	154
Polygynous	66.7	220	67.9	326
Type of Family				
Nuclear	27.9	92	22.3	154
Extended	72.1	238	77.7	326
Family Size				
One	0.9	3	2.3	11
Two	7.6	25	4.6	22
Three	13.9	46	15.6	75
Four	19.4	64	15.2	73
Five	14.5	48	22.3	107
Six	13.3	44	15.0	72
Seven	9.1	30	5.8	28
Eight	9.7	32	10.0	48
Nine+	11.5	38	9.2	44
Mean	5.3		5.2	

Number of Male Children				
None	3.0	10	4.8	23
One	19.7	65	22.5	108
Two	25.5	184	24.8	119
Three	24.8	82	25.2	121
Four	13.6	45	10.0	48
Five	6.7	22	7.1	34
Six	6.1	20	4.8	23
Seven	0.6	2	0.8	4
Mean	2.7		2.6	
Number of Female Children				
None	1.2	4	2.7	13
One	22.4	74	15.6	75
Two	27.3	90	29.0	139
Three	27.0	89	31.0	149
Four	10.9	36	10.6	51
Five	7.9	26	7.9	38
Six	2.4	8	2.7	13
Seven	0.9	3	0.4	2
Mean	2.6		2.7	
Ever desired for more children				
Yes	34.56	66	30.8	79
No	5.5	264	69.2	401
If staying with Children				
Yes	69.4	229	72.1	346
No	30.6	101	27.9	134
Age at First Marriage				
15-19	33.9	112	42.1	202
20-24	42.7	141	47.1	226
25-29	20.3	67	10.6	51
30+	3.1	10	0.2	1
Mean	22.0		20.9	

Achieved Fertility by Old age Security Expectation, by Sex

According to Table 2, the majority of the respondents were not influenced by old age expectation to have their present family size.

The basis for this question was the traditional belief that the more the children one has, the more likely one's care at old age. However, Table 2 shows that only a quarter of the male respondents were influenced by old age expectation to have certain number of children; about three-tenths of the female respondents were so influenced. The basis for the response is the fact that child bearing is perceived as act of God and therefore cannot be manipulated by anybody to achieve an advantage.

Achieved Fertility by Selected Socio-Demographic and Economic variables

Table 2 : Percentage Distribution of Respondents by achieved fertility and old age security expectation, by sex.

Characteristic	Male		Female	
	%	N=330	%	N=480
Did old age expectation influence the number of children?				
Yes	25.5	84	28.1	135
No	74.5	246	71.9	345

Table 3 : Percentage distribution of the elderly by level of fertility by selected socio-demographic and economic variables.

Characteristics	Male (N = 330)				Female (N = 480)			
	Low	Med	High	Total	Low	Med	High	Total
Place of Residence								
Rural	23.4	48.4	28.2	184	23.7	52.8	23.4	316
Urban	23.3	45.9	30.8	146	17.1	48.2	34.8	164
		$X^2 = 0.29$				$X^2 = 7.78$*		
Age								
60-64	18.7	48.5	45.4	134	17.8	51.9	30.3	208
65-69	25.2	48.6	26.1	111	26.2	52.5	21.3	183
70-74	26.8	51.8	21.4	56	18.5	55.4	26.2	65
75-79	33.3	38.9	27.8	18	28.6	14.3	57.1	14
80+	27.3	64.5	7.2	11	20.0	40.0	40.0	10
		$X^2 = 13.10$*				$X^2 = 16.40$**		
Type of Marriage								
Monogamous	29.1	54.5	16.4	110	23.4	48.1	28.5	154
Polygamous	20.5	43.6	35.9	220	20.3	52.9	26.8	326
		$X^2 = 13.72$*				$X^2 = 4.74$		

Education								
None	20.5	47.7	31.8	44	15.8	61.1	23.1	95
Primary Inco.	24.1	49.1	26.7	116	25.8	51.0	23.2	198
Primary Co.	26.8	51.2	22.0	82	19.4	51.6	29.0	124
Secondary Inco.	29.4	49.0	21.6	51	35.3	38.2	26.5	34
Secondary Co.	9.7	29.0	61.3	31	6.3	31.3	62.5	
Post Secondary	-	33.3	66.7		6.3	31.3	62.5	
		$X^2 = 24.67$**				$X^2 = 30.30$**		
Type of Family								
Nuclear	28.3	51.1	20.7	112	23.4	48.6	28.0	202
Extended	21.4	45.8	32.8	218	21.0	52.2	26.9	278
		$X^2 = 5.04$*				$N^2 = 3.14$		
Living Arrangement								
Staying with children	16.2	48.0	35.8	229	18.5	52.3	29.2	346
Not staying	39.6	45.5	14.9	101	29.1	48.5	22.4	134
		$X^2 = 27.08$**				$X^2 = 6.98$*		
Type of Work								
Trading	19.1	46.1	34.8	89	27.4	47.3	29.3	146
Government Work	29.1	49.3	21.6	148	22.4	54.3	23.3	219
Others	18.7	44.0	37.3	93	12.6	41.4	46.0	115
		$X^2 = 12.11$				$X^2 = 29.90$**		

*Significant at $P < 0.05$ **Significant at $P < 0.01$
Low = 1-3 children Medium = 4-6 children High = 7+ children

Table 3 shows the percentage of respondents by achieved fertility by selecting socio-demographic variables. In certain respects, the results did not reflect the expected outcome. Amongst the male respondents, about three-fourths of urban dwellers have more than four children relatives to more than four-fifths of their rural counterparts. On the other hand, the effect of place of residence is also not significant among female respondents; for example, about four-fifths of both urban and rural areas have more than four children. This may be attributed to the efficacy of traditional methods of birth control (periodic abstinence, withdrawal, ring charm, pillow charm and others). Also, condoms are distributed free of charge in the rural areas whereas they are sold in the urban areas. Yet, there is the need to reduce this fertility rate put at 5.28 per woman. Despite the fact that modern methods of family planning like condom, injections and others are gaining ground in both urban and rural, place of residence, there is still need to reduce this fertility in order to enhance the fight for poverty eradication. One striking observation is that the proportion of female respondents in both areas with more than four children is higher than the male counterparts. This

was not expected because efforts at reducing fertility rate have been focused on the women. A good example of this phenomenon was the 1991 Nigerian population policy, which expected an average of four children per woman. The implication of the above is that women still constitute a significant proportion in the determination of family size and more efforts should be focused on vasectomy and ultra uterine devices and even Norplant. One way of doing this is to create incentives for any woman who comes forward for vasectomy after two or three births.

With respect to age, the observed pattern is that of high fertility at lower ages. This is quite expected as an average elderly respondent has at least four children. The chi-square value of 16.40 for female category is statistically significant.

The study expected those in polygamous marriage to have more children than those in monogamous marriage. This was confirmed by the study where about four-fifths of those in polygamous unions have more than four children while about seven out of every ten respondents in monogamous unions have more than four children. The above has proved right out a priori expectation. To strengthen the above result is the chi-square value of 13.72 for male category, which is statistically significant.

The result of the effect of educational attainment on number of children is quite revealing. It shows that more men than women are influenced by education to have less than four children. The highest proportion among the male with more than four children are those who completed secondary education, this is rather surprising and the highest proportion among the female with more than four children are even those with post-secondary education. However the justification for the above result may be found in the low educational status of the study population. For example very few of them have secondary education and above. The fact that the chi-square value of 24.67 for male is significant is not surprising while that for female (30.30) is significant further strengthens the above assertion. Type of family did not reveal contradictory results with respect to number of children. Among males and females, those in extended families are more likely to have more than four children than those in nuclear families. To strengthen the

Table 4 : Odds ratios from two logistic regression models examining the effect of selected characteristics on achieved fertility

Characteristics	Male		Female	
	Odd Ratio	S.E.	Odd Ratio	S.E.
Age				
60-69	2.02*	0.336	1.26	0.327
70-79	1.45*	0.333	0.84*	0.321
80+	1.00	Rc	1.00	Rc
Education				
None	1.66	0.434	1.42*	0.310
Primary	1.00	Rc	1.00	Rc
Secondary	1.62	0.324	1.05	0.359
Place of Residence				
Rural	1.06*	0.271	0.723	0.254
Urban	1.00	Rc	1.00	Rc
Type of Work				
Trading	0.922	0.390	0.386*	0.347
Govt. Work	0.534	0.336	0.486*	0.332
Others	1.00	Rc	1.00	Rc
- 2 log likelihood	302,991	457,504		
Model Chi-square	6.912	14.446		

*Significant at P < 0.05
**Significant at P < 0.01 rc – reference category

above result is the chi-square value of 5.04 for male category, which is statistically significant.

Not surprising those living with their children are more likely to have more than four children than those not living with their children. The fact that the chi-square values (27.08 and 6.98 for male and female categories respectively) are statistically significant strengthens this assertion. In terms of occupation, Table 3 shows that elderly male and female respondents who worked in government establishments are less likely to have more than four children than who were traders. The implication of the above is that more female across occupation have more children than their male counterparts. The fact that the chi-square

value of 29.90 for female category is statistically significant strengthens this assertion.

Multi-Variate Analysis

Table 4 presents the odds ratios of two logistic regression models examining the effect of some basic characteristics on achieved fertility. In this regard, separate models are developed on the basis of gender, examining the effects of the independent variables on the likelihood of high fertility by sex of respondents. The dependent variable is coded 1 for high fertility and 0 if otherwise. The aim is to assess the effect of each of the independent variables (with respect to defined categories) on achieved fertility while others are held constant. According to the Table, while age of respondents, education, occupation are significantly related to achieved in model 2, in the male model, with the exception of education and occupation, all the characteristics are significantly associated with achieved fertility. In the first model, rural residence is 1.1 times more likely to have higher number of children than urban settlement. With respect to educational attainment surprisingly, while no education is 1.7 times more likely to have high number of children, secondary education is 1.6 times more likely to have high number of children than primary education. In respect of age of respondents, while those age 60-69 are 2.0 times more likely to have more children, those aged 70-79 are 1.5 times more likely to have high number of children than those aged 80 years and above. In terms of occupation, while those who worked in government organization are 53 percent times less likely, traders are 92 percent less likely to have high number of children than those who worked in “other” category.

In female model, elderly education indicates that while no schooling are 1.4 times more likely, secondary education are 1.1 times more likely to have high number of children than primary education. With respect to age of respondents, while those aged 60-69 are 1.3 times more likely, those aged 80 years and above are 84 percent times less likely to have high number of children than those aged 70-790. Contrary to the literature review, rural dwellers are 72 percent times less likely to have high number of children than their urban counterparts.

Conclusion

The post-Cairo International Conference on Population and Development, and the World Assembly on elderly in Vienna made recommendations bothering on the elderly's health, while proffering measures for improving their lives, and that of the rest of mankind, within the framework of sustainable development. These meetings and others witnessed an increased interest in the social and economic security of the elderly. Several studies (Adebagbo, 1978; Brand, 1993; Togonu-Bickersteth, 1987a, b, 1988, 1989, 1995; Peil, 1991,1992; Ekpenyong, 1987) have focused on the various aspects of the elderly problems, ranging from health, gender, and economic, inter-generational households among others. However, little or nothing has been done on the social and economic security of the elderly. This study was borne out of the fact that no society or government can offer total care for all elderly people – no matter how developed or wealthy the country is. This fact particularly applies to Nigeria, where a large proportion of the population comprises poor or indigent persons. What this means is that a great deal of the responsibility for the care of these persons devolves upon caregivers in the community, usually the family members. Therefore, the paradigm that places elderly's care on the feet of government needs to be thoroughly examined as it is more apparent that family constitutes the core of the elderly care especially in developing countries like Nigeria.

Therefore, a great attention is paid, in this study, to the informal care system, while not ignoring the expected formal social security from government. The importance of the non-governmental organizations in the care of the elderly is also treated for it is pertinent bearing in mind the fact that all the countries in Africa are set to go through the process of demographic transition during the next two decades, with the obvious implication for population ageing. According to the Nigerian 1991 census, there are about 4.6 million Nigerians aged 60 years and above, or 5.2 percent of the entire population (NPC, 1994). It is evident from the study that old age expectation had some effect on family size. The import of the above is that there is a high value for children as a source of old age support.

The study refutes one prevailing notion, that the higher the number of children, the more likely the level of care an elderly person received. Therefore there was emphasis on quality of children rather than number of children. However, the study confirmed that the family system still contributes significantly, in most cases, towards the social and economic security of elderly Nigerians, though such contribution tends to come, primarily and mostly, from the elderly person's own children, rather than from the extended family, as such.

The idea that old-age security and well being in Nigeria should remain the primary responsibility of the family is untenable. Government must assume the primary responsibility in a partnership in which the family also continues to play a significant role. Therefore, it is also recommended that appropriate measures be introduced by government to protect the family, in particular, the nuclear family, to strengthen family values and promote inter-generational understanding, as well as to empower Nigerian youths, especially, through significant improvements in the educational, employment and other economic opportunities available to them, so that they will be in a better position to take adequate care of their elderly parents.

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

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ABSTRACT

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

Key words : Indian Social System, Interpersonal relations, Life satisfaction, Chronic diseases, Family care giving.

The family ties in India are strong and overwhelming majority of the old live with their family members. However, the position of an increasing number of older persons is becoming vulnerable. In the present scenario we cannot take it for granted that the children will look after elderly parents when they need care in their old age. The Indian social system is rapidly under transitions; the structure & functioning of the family is fast changing the structure refers to the type of family and functioning denotes the dynamics of interactions, interpersonal relations and communication. These three dimensions are distinctive features and not interchangeable. Healthy relations among family members grow only when healthy interactions amongst them are deliberately created and reinforced. The transition in all the 3 components is a serious threat for healthy ageing (Khan, 2004).

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

Quality of Life (QOL) term is heard frequently these days, particularly when issues of health, ageing and economics are being discussed. The definition and measurement of quality of life has been comprehensively developed by Cummins (1997 a)-"Quality of Life is both objective and subjective, each axis being the aggregate of seven domains: material well-being, health productivity, intimacy, safety, community and emotional well-being. Objective domains comprise culturally relevant measures of objectives well-being. Subjective domains comprise domain satisfaction weighted by their importance to the individual". With subjective quality of life established as a valid and useful social indicator, it then becomes important to better understand this measure by considering the psychological processes that contribute to an individual's satisfaction with different areas of their life.

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

Loneliness is popularly viewed as a relative deficit in social relationship with others in the environment. Russell *et al.* (1980) defined loneliness" as the relational deficit reflecting interpersonal and social relationships that the individual evaluates as quantitatively inadequate

or too few in numbers: However, elderly experience about loneliness is devastating to social and emotional health. The elderly people desire to be part of social network and inability to be part of a social network and lack of friends in old age results in the experience of loneliness.

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

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

Study Design : The present study was cross-sectional study, descriptive in nature. It was conducted in the areas representing different social groups in Delhi.

Study Population : 320 elderly people who were of 60 years of age or more were selected from the study area. Both males and females in equal number were included in the study.

Sampling Technique :

The study utilized multistage stratified random sampling.

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

Research tools

1. **Interview Schedule-** Keeping the objectives in mind, list of a very few expectations prepared. The list could be exhaustive. But this study included only few expectations which were identified in different studies.

2. **Rapid Disease Screening Check-list by A.M. Khan.** Study included Rapid Disease Screening Check-List (RDSC) by A.M. Khan. This technique was developed by utilizing international classification of 22 diseases, prominent symptoms of each disease was written by one medical doctor and subsequently the same was put up to a group of 5 medical doctors, who had to verify whether the symptoms listed before each disease was correct or not. All the 5 doctors confirmed that the symptoms listed under each disease are highly correct. Subsequently, one field investigator from medical background was asked to collect data from elderly

by using the checklist. Investigator had to collect data only by asking the symptoms and not the disease. The investigator was instructed to collect the prescription of the doctor from the elderly who were undergoing some treatment. This confirmed that the detection of the disease based on symptoms was correct to a very high degree when verified from the prescriptions given by the treating doctor. In the next stage, a study data using RDSCL conducted on a sample of 384 elderly was conducted. The correlation between the prescription based diseases and symptoms based diseases was computed and; it was found to have a very high reliability value of 0.92. The present study included only some chronic diseases like cardiac, hypertension and diabetes.

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

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

Data Analysis and Interpretation

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

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

Table 2: Education Level of the respondents & their spouses (N=320)

Education level	Frequency	Percent
Illiterate	36	11.3
Primary to middle level	64	20.0
High school to higher secondary	85	26.6
Graduate & above	135	42.2
Total	**320**	**100.0**

Table 3 : Social group wise literacy level of the respondents (N=320)

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

(Figures in parenthesis indicates percentages)

Expectations, Reality & Life Satisfaction

As evident from the Table 1,2 & 3, the elderly in majority (82.2%) come from joint family, educational level is relatively very low in lower economic group. 99.1 percent were married. In this study only few expectations are listed. The effort was made to find out reality score against each expectation. Reality refers to how those expectations are met by the family members in day to day life. So reality score is fulfillment of expectations. The gap between the expectations and actual treatment given to it could be potential cause of elderly problem, particularly emotional in nature which may be strongly associated with some non-communicable diseases like hypertension, diabetes, cardiac etc.

Table 4 : Elderly's expectations for care from family members and actual treatment they received(N=320)

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

(Figures in parenthesis indicates percentages)

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

Table 5 : Family members taking care of respondents in reality (N=320)

Reality	Take care of health	Include in important household matters	Not to leave alone at home	Not to be abused	Sons not fight with each others	Females not fight with each others	Expenditure to be borne equally	All should respect	Fulfil all needs	Not to avoid them	Live life the way they want
Yes	119 (37.2)	82 (25.6)	171 (53.4)	36 (11.3)	75 (23.4)	91 (28.4)	46 (1 4.4)	307 (95.9)	108 (33.8)	173 (54.1)	173 (54.1)
No	201 (62.8)	238 (74.4)	149 (46.6)	284 (88.8)	6 (1.9)	229 (71.6)	274 (85.6)	13 (4.1)	212 (66.3)	147 (45.9)	147 (45.9)

(Figures in parenthesis indicates percentages)

As evident from the table 4 and 5 Taken care by the family members, 89% of the respondents expected that their family members should take care of them but only 37% in actual receive the same treatment.92 percent of the elderly felt that they should be included in important house hold matters but only 26% of the elderly in reality were taken by the family members. 83% of the elderly expected from their family members that they should not leave them alone in the house but 53% of them were actually left alone in the house. 98.4% of the elderly felt that they should not be abused or ignored by their family members 11.3% in reality were being abused by their family members. The expectations of the elderly regarding their sons and females of the family was 98% and 95% respectively, that they should not fight with each other. When tried to find out in actual it was seen that 23% and 28% of their sons and females of the family were in fighting with each other more than the normal. (Though the frequency of fights considered by elderly as significant dependent on the perception of the elderly)67% of the elderly felt that the expenditure should be borne by all the members equally but in reality only 14.4% of the family members shared the expenditure equally. 96% of the respondents felt that all the family

members should respect them and in real all those who felt that they should be respected were actually given the due respect by their family members.86% of elderly expected from their family members should fulfil their needs and when asked in real only 34% of the respondents family members fulfil their needs. A significant percentage of elderly (98%) felt that they should not be avoided by their family members and out of them 54% of the elderly were avoided by their family members. 97% of the elderly wanted that they should be allowed to live their life the way they wanted but only 54% were only allowed by their family members to lead their own life the way they wanted.

Table:6 Difference between Expectation and Reality

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

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

Table 7 : Comparison of expectations and reality among three age groups (A1-60-69 yrs, A2-70-79 yrs, A3-e" 80 Yrs)

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

When we tried to see the differences in the expectations and the actual treatment that the elderly got from their family members and the gap between these two according to age, Hence there is no significant difference both within as well as between the three different age groups. It shows that expectations of Elderly as parents and grant parents from family members continues regardless of progression of Age. Addressing this by orientation training of elderly can help them in resetting their expectations profile which could smoothen their living and safeguard them from host of emotional problems, adjustment etc. The findings equally suggest that education about elderly to family members can help them to become more sensitive and sensible.

Subsequent effort was made to explore whether Expectation Profile of elderly varies across different social groups. It is assumed

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

Table 8 : Comparison of expectations and reality among three groups (S1-UEG, Upper Economic Group, S2-MEG, Middle Economic Group, S3-LEG, Lower Economic Group)

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

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

When we tried to see the difference in the expectations, the actual treatment the respondents got from their family members and the gap between these two in three different social groups, it was seen that there is a significant difference in the expectations of high and middle

class, high and low class and middle and low class. Similarly in the score of actual treatment all the three social classes were statistically significant. Also when compared within the groups it was found highly significant statistically.

Life Satisfaction

Table 9 : Comparison of life satisfaction items among three groups (A1-60-69 yrs, A2- 70-79 yrs, A3- > 80 Yrs) (N=320)

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

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

Table 10 : Comparison of life satisfaction items among three groups (S1-upper economic social group, S2-Middle economic social group, S3-lower economic social group) (N=320)

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

Similarly when tried to find out the comparison of life satisfaction amongst three different social groups it was not significant statistically. The life satisfaction amongst elderly in this study is found to be almost some regardless of age and socio economic status, the profile may be relatively different.

The curiosity in this study was to see how Expectations from family members and actual treatment provided by family members is related to some chronic diseases with which some elderly suffer. So correlations was carried out using SPSS Package. The results are shown in the table.

Table 11 : Relationship (correlation coefficient) of expectations and actual treatment and difference between expectation and treatment in real with health problems (D1=Cardiovascular diseases, D2= Hypertension, D3= Diabetes and D4=Depression) (N=320)

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

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

In table 12, an effort was made to find out the relationship between difference in the expectations, the actual treatment the respondents got from their family members and the gap between these two and different diseases, the followings were the findings :

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

4. Depression : For Depression again, there is a significant correlation between expectation and the difference in actual treatment and the depression in older people.

Table 12 : Relationship (correlation coefficient) of Life satisfaction with diseases (D1=Cardiovascular diseases, D2 = Hypertension, D3 = Diabetes and D4=Depression (N=320)

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

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

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

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Crimes Against the Elderly

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ABSTRACT

The cases of crimes against the elderly have been increasing very fast in the country. Whatever, cases are reported to the police may, in reality, are the tip of the entire problem. Since, this is an insidious problem affecting the whole society and need social actions. The present work has used the method of content analysis to gain insight into the media reports of the crime victim elderly. This paper attempts to inquire and understand the causative factors and types of crimes against the elderly. Result shows that most of the elderly victim emanates from their own family members. The incidents of murder (72.4%) are higher than other crimes and prevalent in both urban and rural areas.

Keywords : Elderly, Victim, Murder, Crime.

The population of the aged people 60 and above is growing fast all over the world. In India the population in this age group is growing rapidly. From 5.6% of total population in 1950, it became 7.6% in 2000 and will be 11% in 2020 and 20.6% in 2050 (Bureau, 2004). As the population of the aged people increases, their problems also multiply. It is not difficult to come across reports of the aged people being attacked, harassed and isolated by anti-social elements, neighbours, domestic servants, relatives and even their own family members.

Family is the primary care giving unit for the aged person and a major proportion of the aged are dependent on family for their care. Several researches have come to the conclusion that the physical impairments of the elderly and subsequent dependence on the care taker make them vulnerable to acts of abuse, neglect and violence

(Malley *et al.*, 1979, Hickey and Douglass, 1981, Steinmetz, 1983, Patel M, 1993).

Elderly are targeted for grievous hurt, robbery, murder and even sexual assault. They are often attacked at or near their homes by their children, relatives and miscreants. In view of the literature quoted above, there should have been active concern for preventive and punitive procedures. Let us examine, now, how for the media, especially the print media is sincere to the task.

Elderly victim has been perceived as a burning problem affecting the society. Keeping this point in view the present study was undertaken, with the following objectives :

1. How is the problem of crime against elderly being perceived and reported by the print media in India?
2. What are the different types of crime against the elderly ?
3. To know about the victim -offender relationship.

Research Methodology

In the present work the newspaper reports (Hindustan Times M.P. Edition, 2004-2008 and The Times of India, U.P. Edition, 2007-2008) have been the resource of data. The news items relating to the crime against elderly (both male and female) 60 and above years have been systematically collected and their content have been analysed and presented. The analyses have been presented in a tabular form. Thus the method of content analysis was used in the analysis of data.

Findings

Distribution of the cases of elderly crime victims

Table 1 : Victims' Sex

Sex	Number of cases	Percentage
Male	20	34.48
Female	27	46.55
Both Sex	11	18.96
Total	58	100

Table 2 : Residence

Place	Number of Cases	Percentage
Urban	45	77.58
Rural	13	22.41
Total	58	100

Table 3 : Crime Scene

Scene	Number of Cases	Percentage
Indoor	34	58.62
Outdoor	23	39.65
Mobile	01	01.72
Total	58	100

Table 4 : Crime Commission Time

Time	Number of Cases	Percentage
Day	36	62.06
Night	11	18.96
Not Mentioned	11	18.96
Total	58	100

Table 5 : Victims' Age

Age	Number of Victims	Percentage
60-64	18	26.08
65-69	11	15.94
70-74	10	14.49
75-79	10	14.49
80-84	04	05.79
85 and above	01	01.44
Not mentioned	15	21.73
Total	69	100

Table 6 : Nature of Crime

Crime	Section (IPC)	Number of Cases	Percentage
Murder	300	35	60.34
Attempt to Murder	307	01	01.72
Robbery and Murder	390, 300	03	05.17
Arson and Murder	435, 300	02	03.44
Hit and Run Case and Culpable Homicide	299	01	01.72
Rape	375	03	05.17
Rape and Murder	375, 300	01	01.72
Theft	378	03	05.17
Cheating, Forgery, Criminal Intimidation	415, 463, 503	01	01.72
Grievous hurt and	320, 391	01	01.72
Dacoity Robbery	390	01	01.72
Assault and Robbery	351, 390	02	03.44
Hurt and Robbery	319, 390	01	01.72
Hit and Run Case, Grievous Hurt	320	01	01.72
Grievous Hurt	320	01	01.72
Voluntarily causing hurt and Wrongfully restraining	323, 341	01	01.72
Total		58	100

Table 7 : Number of Offenders in each Case

Number of Offenders	Number of Cases	Percentage
01	16	27.58
02	06	10.34
03	04	06.89
04	04	06.89
05	09	15.51
Not mentioned	19	32.75
Total	58	100

Table 8 : Victim – Offender Relationship

Relation	Number of Cases	Percentage
Son	05	08.62
Son and Daughter- in-law	01	01.72
Nephew	01	01.72
Grandson	03	05.17
Daughter-in-law and Relatives	02	03.44
Son-in-law	01	01.72
Husband, Son, Daughter-in-Law	01	01.72
Wife	01	01.72
Friend	01	01.72
Servant	04	06.89
Neighbour	01	01.72
Acquaintance	06	10.34
Police person	01	01.72
Truck driver	02	03.44
Unidentified person	17	29.31
Not mentioned	11	18.96
Total	58	100

Result and Discussion

Crimes against the elderly in print media show a very strange picture, 58 cases were found during the five years (2004-2008). Most of the crimes against elderly cases, unfortunately, are not reported. This also gives a lopsided picture of crime against elderly in the country.

Table 1 reveals that female victims are more in number than males. As the data shows in Table 2, cases of crime against elderly are reported more in urban areas (77.58%) than rural areas (22.41%).This is because, most of the rural cases take place in local papers than others. Although, elders consider their home the secure place, this is where a large number of such incidents occurred. Data indicates that 58.62% cases were committed inside the door. Only one case of murder was found at the mobile scene of crime (Table 3). As described in Geographical Theory of Criminology “most of the crimes against person committed during day time while crimes against property at night”. This study also reveals that majority of the crimes against person were committed during the daytime (Table 4).

The age of victims varied between 60-85 years which indicated that the crime against elderly does not respect age. Majority of the victims belong to the age group of 60-64 years (26.08%). A high proportion of elderly, 20 out of 25, belong to the age group of 70-85 years, were found murdered by the perpetrators. It shows, as the age increases, the murder cases also multiply (Table 5).

The apathy of family members towards their elders is a common scenario all over the world. Victimization may be motivated by psychological, social as well as economic. The nature of crime was found from the range of loss of property to total murder. As compare to the other crimes, murder cases have been found more in number (72.4%). Rape is the worst form of crime and it is against the dignity and modesty of a woman. It leaves the stigma and label forever. 6.89% victims of rape cases were found between the ages of 60-78 year (Table 6). Generally, men commit more crimes than women as in this study ratio of male and female offenders were found 5:1(Table 7). It is estimated that the number of crime against men are three times as great as those women. But in violent crimes women are often victimized. Schafer (1975) found out that the proportion of man and woman homicide victims is almost one to one, while Gibson and Klein (1961) found that female homicide victims are more than male victims in the ratio of three to two. In our study the result indicates almost three male homicide victims to one female victim. Similar findings have been observed by Wolfgang (1974).

Victim-offender relationship is one of the most important notions in victimology. It has been found that 25% perpetrators were their own family members. They were son, daughter-in-law, grandson, nephew, etc. Domestic servants, friends, neighbours, unidentified persons were also found indulged in crimes. In some cases domestic servants were the perpetrators of the crime for their material possessions (06.89%). In two cases, truck drivers were also responsible for the” hit and run case”(Table 8).Social disequilibrium, property and land disputes, cast rivalries, personal vengeance and enmity, rural factionalism, intoxication, child in abroad or living alone, police administration have normally been found the causative factors of crime. Often the important happenings in the country are given priority and find their space on the front page

but the cases of crime against elderly appear to have little priority as the study found these items on page 3 to page 16.

There appears to be variation in the cases of crime against elderly, when the data was analysed state wise and union territories. The number of cases of victims of crime is very high in Delhi.It is fact that, the ways of committing crime shows the cruelty behind the crime. The newspaper captions read as follows: (Case 1) "Denied the daily staple of porn and horror films on grandson personal computer, grandson smashed granny's head with a stone pastel and confessed that he had murdered his 67 years old grandmother in Kolhapur, Mumbai"(The times of India April 10,2008). (Case 2) "A 20 year old man has been charged with raping his 78 year old grandmother in southwest Delhi on Tuesday night. The accused a daily wage labourer was reportedly drunk at the time of the incident". (The Times of India, June 27, 2008). (Case 3) "During the argument, daughter-in-law with the help of her neighbour, allegedly blackened the face of 60 year old mother-in-law and later poured kerosene oil over her mother-in-law's body and paraded her in the locality at Kanpur". (Case 4) An elderly couple suffered serious injuries while resisting a dacoity. According to report "couple was living alone in a house. Around 11:30 pm at night two miscreants armed with country made pistols and sharp edged weapons knocked at the door and as the couple opened it, they barged into the room. When the intruders tried to snatch cash and valuables from the couple, they resisted. The miscreants then all attacked them with the butt of a country made pistol, injuring them on head". (The Times of India, February 14, 2008). (Case 5) "An 82 year old woman was assaulted before being robbed at gunpoint by three assailants. The three dragged the woman two her bedroom, tied up the feet, mouth and hands and rained several blows, and even attacked with a knife, leaving deep injury marks on her throat. She finally begged to spare her life and handed over the keys of almirah. They took away Rs. 1.5 lakh in cash and diamond and gold jewelry". (The Times of India, October 16, 2008).

Victims are the forgotten people in the criminal justice system. The modern criminal law, which is supposed to represent the social ambitions and norms, is designed to punish as well as to reform and rehabilitate the criminal. But it overlooks an important by product of crime, the victim.

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Enhancing Community Well-being Through Intergenerational Learning

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ABSTRACT

The end of the twentieth century finds a world that has become an increasingly diverse and complex place. Shifting trends in urbanization, technology, industrialization, health and social structures throughout the world means that many of the existing paradigms, belief systems and policies are being subjected to tensions and realignment. Population ageing, changes in family structures, and isolation among generations are some of the changes that need to be addressed, to ensure community welfare. Within such changing times, government and community service organizations are establishing intergenerational service learning programs that seek to connect youth with the elderly through educational and creative activities that benefit each generation. Intergenerational learning paradigms promote lifelong and life-wide learning as a way to foster active citizenship across all ages and social strata. Such learning helps to dispel age-related myths and stereotypes, and has significant benefits for the community at large.

Key words : Intergenerational learning, Family structures, Community well-being.

Community wellbeing is a concept that refers to an optimal quality of healthy community life, which is the ultimate goal of all the various processes and strategies that endeavor to meet the needs of people living together in communities. It encapsulates the ideals of people living together harmoniously in vibrant and sustainable communities, where community dynamics are clearly underpinned by social justice considerations.

Intergenerational means "being or occurring between two generations" and intergenerational learning refers to the sharing of information, thoughts, feelings and experiences between two generations that can enrich both. Social knowledge has been transmitted from one generation to another throughout history, often informally or incidentally. In early societies, the narrator, typically an old man, guaranteed the survival of the culture through folktales. Through such narrations, the young generations were taught about the ethical secrets of their cultural context. However, with time the roles between elder and young are changing, with young people helping older people acquire the competencies required in a technology-driven society. It can thus be said that there is an informal reciprocity in exchange of information and in the teaching-learning process. However, in the last 40 years, more systematic and formal intergenerational programmes have arisen, with growing recognition of the integral relationship between young and old to lifelong learning and broader social purposes (Hanks and Icenogle, 2001).

Intergenerational Programs are programs that purposefully bring together people of different generations in ongoing, mutually beneficial, planned activities, designed to achieve specified program goals. Through intergenerational programs people of all ages share their talents and resources, supporting each other in relationships that benefit both the individuals and the community. Research cited by Granville (2001), and Kaplan (2001) suggests that successful intergenerational learning programs fulfill age-appropriate developmental needs of youth and adults, are relational and reciprocal (drawing on the strengths or assets of each generation), and create a community in which learning results through collective engagement and participation in authentic activities.

To enhance community well-being, intergenerational learning programs are increasingly being recognized for the following reasons:

- **Older People as a Resource** : Older people over the age of 60 can volunteer more time, and are often the most reliable and committed volunteers.
- **Youth as a Resource** : Younger volunteers are able to provide companionship to older people and participate in service projects

both to assist older adults and to serve alongside older adults to benefit their community.

- **The Ageing Population** : The age distribution of the population is changing. According to UN projection (2007), the number of elderly in India is expected to reach 330 million, a staggering 21 per cent of the total population by the year 2050.
- **Changes in Views of Retirement** : Older adults are interested in taking jobs after retirement that help improve quality of life in their communities.
- **Change within Families** : The decline of extended family networks has resulted in 'generation gap' giving rise to concerns regarding the social and moral education of children, the isolation of the elderly and an increase in negative stereotypes and attitudes about the aged and aging.
- **Age Segregation and Isolation among Generations** : Society has become more age-segregated, providing very little opportunity for interaction between the generations. Intergenerational programmes provide a venue for regular contact, while encouraging people of different generations to advocate for one another.
- **Gaps in Services Provided to Children and Youth** : There is a strong need for tutors, role models, mentors and creative programmes for children and youth in urban and rural communities.
- **Gaps in Services Provided to Older People** : Increasing numbers of older people with varying supportive needs will require more innovative adult care programmes.

Intergenerational programmes are usually one of the following types (Kaplan, 2001) :

1. **Young serving older people** : Friendly visits in homes or senior living facilities; home services; teaching computer skills or English as a second language; and service learning projects such as oral histories.
2. **Older Adults Serving the Young** : Mentoring programs; child care centers with older adult staff or volunteers; teen parenting guidance; tutoring and telephone reassurance.

3. **Older Adults and Youth collaborating in service and/or learning** : Performing/visual arts programmes; family support programs; environmental preservation and intergenerational community service.

Concepts from socio-cultural theory can be applied to this new area of intergenerational learning: 'scaffolding', 'synergy' leading to mutual benefits for the young child and their caregiver, 'syncretizing' of knowledge from different sources, 'funds of knowledge' within communities, and the transmission of knowledge or 'prolepsis' between generations. Thus intergenerational learning can bring huge benefits for the people who take part, their families and the wider community. In fact, linking older adults with youth can provide advantages for the community and for both older adults and the young.

Benefits for the Community

- **Strengthen Community** : Intergenerational programmes bring together diverse groups and networks and help to dispel inaccurate and negative stereotypes Many findings show that such programmes promote more positive perceptions of ageing and the elderly among children and young adults, more willingness to work with the elderly, and changed perceptions of youth on the part of older adults (Granville 2001; Kaplan 2001). Research by Balatti and Falk (2002) and Schuller (2002) demonstrates how intergenerational learning (1) extends, enriches, and reconstructs social networks and builds trust and relationships; (2) influences the development of shared norms and the values of tolerance, understanding, and respect; and (3) affects individual behaviors and attitudes that influence community participation. These programmes also help preserve historical and cultural traditions, enhance community spirit and strengthen partnerships among community organizations and individuals.
- **Maximize Human Resources** : Intergenerational community service programs can multiply human resources by engaging older adults and youth as volunteers in different types of opportunities and populations.

- **Encourage Cultural Exchange** : Intergenerational programs promote the transmission of cultural traditions and values from older to younger generations, helping to build a sense of personal and societal identity while encouraging tolerance.
- **Maximize Financial Resources** : When groups representing young and old approach local funders, they have a better chance of response because funders can see a broader use of their investments. Intergenerational programmes can save money and stretch scarce resources by sharing sites and/or resources.
- **Expand Services** : Intergenerational community service programmes can expand the level of services to meet more needs and address more issues.
- **Inspire Collaboration** : Intergenerational programmes can unite community members to take action on many different types of issues that address human needs across the generations.

Benefits for Older Adults

- **Enhance Socialization** : Older adults want to remain productive and engaged in the community. A way to prevent isolation in their later years is to increase interaction with children and youth. (Carlson *et al.*, 2000). Forty-five percent of Americans working in retirement say they want to work with youth.
- **Stimulate Learning** : Older adults learn new innovations and technologies from their younger counterparts. They want to continue to use the skills they have acquired in their lifetimes as well as acquire new ones. Motivation and commitment to intergenerational programmes comes when they feel they have taken part in their development.
- **Increase Emotional Support** : Regular participation in structured social and productive activities and membership in large social networks have been shown to independently benefit health and functional outcomes as people age. (Glass, 2003)
- **Improve Health** : Older adults who are involved in intergenerational activities feel happier than other older adults (Carlson *et al.*, 2000; Glass, 2003). Some studies also suggest that increasing physical, cognitive, and social activity through

intergenerational programs might help improve health for an ageing population (Jarrott and Bruno, 2003). Older adults who volunteer live longer and with better physical and mental health than their non-volunteering counterparts. (Zedlewski and Schaner, 2006). Older adults who regularly volunteer with children burn 20% more calories per week, experienced fewer falls, were less reliant on canes, and performed better on a memory test than their peers (Fried, 2004) Also, older adults with dementia or other cognitive impairments experience more positive effect during interactions with children than they did during non-intergenerational activities (Jarrott and Bruno, 2003).

Benefits for Youth and Children

- **Improve Academic Performance** : Children build their foundation for reading and related activities from kindergarten through third grade, playing an important role in literacy development. (Teale, 2003) In schools where older adults were a regular fixture (volunteers working 15 hours per week) children had more improved reading scores compared to their peers at other schools. (Rebok, 2004).
- **Enhance Social Skills** : Interacting with older adults enables youth to develop social networks, communication skills, problem-solving abilities, positive attitudes towards aging, and a sense of purpose and community service. Volunteering also promotes good self-esteem.
- **Decrease Negative Behavior** : Research findings indicate that involvement of youth in positive social relationships and meaningful activities is associated with a reduction in risky behavior and an increase in resiliency (Camino, 2000). Further, youth involved in intergenerational mentoring programs are 46% less likely to begin using illegal drugs, 27% less likely to begin using alcohol, and 52% less likely to skip school (Tierney *et al.*, 2000).
- **Increase Stability** : Children and youth gain positive role models with whom they can interact on a regular basis. They develop many positive relationships to civic attitudes and behaviors including volunteering habits, sense of efficacy and trust.

Intergenerational programmes thus promote lifelong and life-wide learning as a way to foster active citizenship across all ages and social strata. Such learning helps to dispel age-related myths and stereotypes, and has significant benefits for the community at large. Intergenerational programmes can also address societal concerns such as literacy, environmental issues, health, crime prevention, and much more, and provide intergenerational solutions to community issues. The promotion of intergenerational civic engagement and the encouragement of such learning can thus significantly enhance the well-being of the community.

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