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Radioprotective Influence of Vitamin E on Energy Generating Enzymes in Prepubertal and Mature Rat Testis

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ABSTRACT

Radioprotective influence of vitamin E has been assessed in testis of 35 day old and 120 day old albino rats exposed to 3.0 Gy and 5.0 Gy whole-body gamma radiation. The investigation was made for a maximum period of 8 days postirradiation with or without vitaminn E (1 mg/g body weight) pretreatment. The alterations in the activities of the adenosine triphosphatase, succinate dehydrogenase and lactate dehydrogenase enzymes were studied and was found to be less pronounced in the testis of vitamin treated irradiated rats. Vitamin E pretreatment helps maintain the enzyme systems in the irradiated testis to a certain extent and helps reduce the radiation damage.

Keywords: Vitamin E, Gamma Radiation, Enzymes, Testis.

Ionizing radiations cause a great deal of damage to the membrane systems by generating free radicals. Chemical and physiological alterations also result from radiation-induced generation of reactive oxygen species (Von Sonntag, 1987). As a result, the cells suffer acute oxidative damage after being subjected to irradiation. Vitamin E is known to be an effective antioxidant which donates a hydrogen atom to the free radicals generated in the cells (Halliwell, 1996), thereby neutralizing their detrimental effects. Possibly, it helps in the maintenance of the structural integrity of the cells and cellular organelle membrane systems and protects the energy generation mechanisms associated with mitochondrial

functioning (Ithayarasi and Shyamala Devi, 1998). Vitamin E assocaited with protein complexes in the inner mitochondrial membranes, has been reporteded to resist oxidative changes under hypoxoic conditions.

In the present work, an attempt has been made to highlight the radioprotective influence of vitamin E on three enzyme systems associated with energy production in cells. The enzymes selected for the study include lactate dehydrogenase (E.C.I.I.127) functioning under anaerobic conditions, succinate dehydrogenase (E.C.1.3.99.1) - an oxidative enzynme of the Kreb's cycle and the energy generating adenosine triphosphatase (E.C. 3.6.1.3). The study has been carried out on the testis of immature and mature Wistar rats (Rattus rattus) employing biochemical methods. The germ cells in the immature testis have been shown to be comparatively more radiosensitive but Vergouwen *et al.* (1994) have reported that the radioresponse of the prepubertal mouse testis is comparable to that of the adult mouse testis.

Materials and Methods

Albino rats (Wistar strain) were obtained from Panjab University, Chandigarh and were bred in the animal house at 25_C ±2°C with light and darkness ratio of 14 hrs : 10 hrs. Rat feed (Hind Lever) and water was given *ad libitum.* Thirty five day old (immature) male rats and 120 day old (mature) rats were divided into six groups each (Groups A to F).

Group A animals of both young and old rats were kept as untreated unirradiated controls.

Group B animals were administered orally with d-α-tocopherol (sigma) at the dose rate of 1 mg/g body weight.

Group C animals were subjected to a 3.0 Gy dose of gamma radiation from Co-60 gamma chamber 900 (BARC, Mumbai).

Group D animals were fed vitamin E (1 mg/g body wt.), three hours prior to 3.0 Gy irradiation exposure.

Group E animals of both ages were exposed to 5.0 Gy dose of gamma radiation.

Group F animals were administered vitamin E three hours prior to 5.0 Gy radiation exposure.

The dose - rate employed for irradiation of animals was 0.20 Gy/Sec., determined by Fricke dosimetry (Schested, 1970).

The animals were sacrificed by cervical dislocation, on days 1,2,3,4 and 8 post-irradiation. At least six animals in each group were sacrificed at each interval. Determination of lactate dehydrogenase (LDH) and succinate dehydrogenase (SDH) activities were carried out using the methods of Wootton (1974) and Nachlas *et al.* (1960) respectively. Adenosine triphosphatase (ATPase) activity was estiamted by the method of Kielly (1969).

Results

Immature rats : The results are presented in Table 1-3

Table 1

Succinate Dehydrogenase activity in immature rat testes (35 days) following gamma irradiation with or without vitamin E treatment as μg diformazon formed/ mg fresh tissue weight/hr at 37°C±S.E.

		Period in days				
Dose	**Group**	**1**	**2**	**3**	**4**	**8**
3.0 Gy	Irradiated	12.495 ±0.128	13.193[b] ±0.164	13.762[b] ±0.0.028	15.532[b] ±0.084	18.827[b] ±0.128
3.0 Gy	Irradiated ±Vitamin E	11.727[d] ±0.035	13.712[d] ±0.028	15.496[d] ±0.140	19.574[d] ±0.312	16.582[d] ±0.012
5.0 Gy	Irradaited	12.600[b] ±0.120	13.821[b] ±0.042	14.993[b] ±0.074		
5.0 Gy	Irradiated + Vitamin E	11.688[d] ±0.042	11.820[d] ±0.042	12.945[d] ±0.165		

N = 12.395 ±0.157

b

($p<0.001$) indicates significant change in comparison to unirradiated control.

d

($p<0.001$) indicates significant change in comparison to irradiated untreated control.

Table 2
Lactate Dehydrogenase activity in immature rat testes (35 days) following gamma irradiation with or without vitamin E treatment as mM pyruvate reacting g fresh tissue at min ±S.E.

		Period in days				
Dose	**Group**	**1**	**2**	**3**	**4**	**8**
3.0 Gy	Irradiated	1.249[b] ±0.017	1.921[b] ±0.027	1.749[b] ±0.0.026	2.049 ±0.010	1.644[b] ±0.013
3.0 Gy	Irradiated ±Vitamin E	1.884[d] ±0.029	2.140[d] ±0.009	2.173[d] ±0.032	1.895[d] ±0.027	1.369[d] ±0.031
5.0 Gy	Irradaited	2.144 ±0.028	1.937[b] ±0.012	2.002[d] ±0.009		
5.0 Gy	Irradiated + Vitamin E	2.293 ±0.050	1.797[d] ±0.033	1.910 ±0.029		

N = 2.083 ±0.025

b

($p<0.001$) indicates significant change in comparison to unirradiated control.

d

($p<0.001$) indicates significant change in comparison to irradiated untreated control.

Table 3
Adenosine triphosphatase activity in immature rat testis (35 days) following gamma irradiation with or without Vitamin E treatment as μg pi released / mg fresh tissue weight / hr at 37°C ± S.E.

		Period in days				
Dose	**Group**	**1**	**2**	**3**	**4**	**8**
3.0 Gy	Irradiated	0.410 ±0.010	0.419 ±0.010	0.343[b] ±0.0.030	0.538[b] ±0.041	0.588[b] ±0.030
3.0 Gy	Irradiated ±Vitamin E	0.427 ±0.002	0.476[d] ±0.002	0.443[d] ±0.002	0.581 ±0.002	0.575 ±0.009
5.0 Gy	Irradaited	0.315[b] ±0.002	0.305[b] ±0.009	0.291[b] ±0.001		
5.0 Gy	Irradiated + Vitamin E	0.354[d] ±0.001	0.375[d] ±0.002	0.384[d] ±0.003		

N = 0.466 ±0.016

b

($p<0.001$) indicates significant change in comparison to unirradiated control.

d

($p<0.001$) indicates significant change in comparison to irradiated untreated control.

Succinate dehydrogenase : Whole-body irradiation of 35 day old rats with 3.0 Gy and 5.0 Gy resulted in a significant increase in the enzyme levels in the testis at all the postirradiation intervals except at day 1. At 3.0 Gy dose, an increase of 51.8 per cent in the enzyme activity was used at day 8 postirradiation. In the vitamin E treated irradiated rats, increase in SDH activity in testis was significantly higher at days 3 (12.5%) and 4 (26.0%) after 3.0 Gy dose but a significant decrease (11.0%) at day 9 postirradiation in comparison to the untreated irradiated testes. At 5.0 Gy dose, the enzyme activity was less than that recorded in the untreated irridiated testis and the value nearing the normal control level at day 3 postirradiation. However, this dose proved to be lethal as no animal survived beyond day 3 postirradiation.

Lactate dehydrogenase : Exposure of rats to 3.0 Gy and 5.0 Gy resulted in reduced enzyme concentration in the testicular tissue at all the postirradiation intervals. In comparison to unirradiated control, the maximum decrease (40.1%) in the enzyme level was observed at day 1 after 3.0 Gy dose and at days 2 and 3 after exposure to 5.0 Gy dose. The localization of LDH activity was lower in the irridiated testis than that observed in the normal unirradiated testis. In the vitamin treated irradiated rats, at 3.0 Gy dose LDH activity in the testis increased by 50.8 per cent at day 1, 11.4 per cent at day 2 and 24.2 per cent at day 3 as compared to untreated irradiated testis. At higher dose, an increase of 6.9 per cent in the enzyme activity was observed at day 1 postirradiation.

Adenosine triphosphatase : ATPase activity in the testis decreased in the early postirradiation intervals but showed elevation at days 4 and 8 after exposure to 3.0 Gy dose. A marked fall (32.4% to 37.5%) in the enzyme activity was noted from day 1 to day 3 after exposure to 5.0 Gy dose. In the vitamin treated irradiated rats, an increase in the enzyme level in the testis was noted at all the postirradiation intervals after both the doses. A significant increase in the enzyme activity was observed at day 2 (13.6%) and day 3 (29.1%) after 3.0 Gy dose as compared to untreated irradiated testis. At 5.0 Gy dose, 22.9 per cent and 31.9 per cent increase in the ATPase activity was noted at days 2 and 3, respectively.

Mature rats : The data is presented in Table 4-6.

Table 4
Succinate dehydrogenase activity in mature rat testes (120 days) following gamma irradiation with or without vitamin E treatment as μg diformazan formed/mg fresh weight/hr at 37°C ± S.E.

		Period in days				
Dose	**Group**	**1**	**2**	**3**	**4**	**8**
3.0 Gy	Irradiated	7.795[b] ±0.028	9.604[b] ±0.106	8.716[b] ±0.0.027	8.937[b] ±0.084	10.911[b] ±0.028
3.0 Gy	Irradiated ±Vitamin E	10.207[d] ±0.036	11.838[d] ±0.056	11.013[d] ±0.013	11.164[d] ±0.069	11.905 ±0.394
5.0 Gy	Irradaited	11.478[b] ±0.014	11.204[b] ±0.128	11.556[b] ±0.061	10.993[b] ±0.063	18.518[b] ±0.041
5.0 Gy	Irradiated + Vitamin E	11.015[d] ±0.013	12.972[d] ±0.070	11.916[d] ±0.042	12.594[d] ±0.041	15.132[d] ±0.015

N = 12.800±0.147

b

($p<0.001$) indicates significant change in comparison to unirradiated control.

d

($p<0.001$) indicates significant change in comparison to irradiated untreated control.

Table 5
Lactate dehydrogenase activity in mature rat testes (120 days) following gamma irradiation with or without vitamin E treatment as mM pyruvate reacting/g fresh tissue/min ± S.E.

		Period in days				
Dose	**Group**	**1**	**2**	**3**	**4**	**8**
3.0 Gy	Irradiated	3.165[b] ±0.019	3.035[b] ±0.016	2.775 ±0.013	2.593 ±0.008	2.352[b] ±0.008
3.0 Gy	Irradiated ±Vitamin E	2.866[d] ±0.006	2.775[d] ±0.013	2.713 ±0.06	2.399[d] ±0.024	2.600[d] ±0.007
5.0 Gy	Irradaited	2.421 ±0.135	3.13[b] ±0.010	2.537 ±0.007	2.878[b] ±0.010	2.573 ±0.005
5.0 Gy	Irradiated + Vitamin E	2.982[d] ±0.0090	2.442[d] ±0.006	3.419[d] ±0.009	3.140[d] ±0.016	2.712 ±0.026

N = 2.698 ± 0.015

b

($p<0.001$) indicates significant change in comparison to unirradiated control.

d
($p<0.001$) indicates significant change in comparison to irradiated untreated control.

Table 6

Adenosine triphosphatase activity in mature rat testes (120 days) following gamma irradiation with or without vitamin E treatment as μg Pi released mg fresh tissue weight/hr at 37°C ± S.E.

		Period in days				
Dose	**Group**	**1**	**2**	**3**	**4**	**8**
3.0 Gy	Irradiated	0.361 ±0.039	0.467 ±0.041	0.645[b] ±0.001	0.525[b] ±0.040	0.541[b] ±0.001
3.0 Gy	Irradiated ±Vitamin E	0.371 ±0.0.039	0.536 ±0.041	0.657 ±0.001	0.544 ±0.040	0.735[d] ±0.001
5.0 Gy	Irradaited	0.255[b] ±0.001	0.319 ±0.005	0.396[b] ±0.005	0.409 ±0.002	0.453 ±0.040
5.0 Gy	Irradiated + Vitamin E	0.324 ±0.020	0.335 ±0.050	0.425 ±0.025	0.417 ±0.036	0.789 ±0.003

N = 0.346±0.003
b
($p<0.001$) indicates significant change in comparison to unirradiated control.
d
($p<0.001$) indicates significant change in comparison to irradiated untreated control.

Succinate dehydrogenase : A signfiicant fall in the SDH activity was observed in rat testis after exposure to 3.0 Gy during all the postirradiation intervals and the maximum decrease (31.4%) was noted at 3 days after exposure. At the higher dose of 5.0 Gy the levels of enzyme activities were low from day 1 to 4 but significant elevation (44.6%) was noted at day 8 postirradiation. In comparison to untreated irradiated rat testis, SDH activity increased in the vitamin treated irradiated testis at all the postirradiation intervals after 3.0 Gy dose. At higher dose, a significant increase of 15.7 per cent and 14.5 per cent was noted at days 2 and 4 after exposure followed by a decline of 18.2 per cent at day 8 postirradiation.

Lactate dehydrogenase : An increase in LDH activity was observed in the testis in the initial intervals following exposure to 3.0 Gy dose but in the later intervals, a fall in the enzyme activity was noted. At 5.0 Gy dose, LDH activity showed unduration at various

intervals, the value nearing normal at day 8 postirradiation. In the vitamin treated irradiated rat LDH activity depicted significantly low value at all the stages except at day 8 after exposure to 3.0 Gy gamma radiation. An increase of 10.5 per cent in the enzyme activity was noted at this stage as compared to the untreated irradiated testis. At 5.0 Gy dose, 34.7 per cent increase in the enzyme activity was recorded at day 3 and 9.1 per cent at day 4 followed by a fall at day 8 postirradiation, achieving the normal control level.

Adenosine triphosphatase : Whole-body irradiation of rats resulted in an increase in the ATPase activity in the testis at all the postirradiation intervals. A significant decline in the enzymic activity was noticed at day 1 after exposure to 5.0 Gy dose. In the vitamin treated rats, testis exhibited increased ATPase activity at all the intervals after exposure to 3.0 and 5.0 Gy doses as compared to the irradiated rats. At 8 day, the increase in the eznyme activity was 35.8 percent after exposure to 3.0 Gy and 74.1 per cent following 5.0 Gy dose.

Discussion

Adenosine triphosphatase is associated with energy yielding systems in the reproductive organs. The increase in the adenosine triphosphatase activity after irradiation has been described in several mammals (Nehru *et al.,* 1991). Delhumeau-Ongay *et al.* (1973) reported an increase in Ca^{++} - and Mg^{++} - ATPase activities in rat testis which undergoes regression of germinal epithelium. The adenosine triphosphatase activity declined in the testis in the initial postirradiation intervals after exposure to 3.0 Gy probably on account of slowing down of the metabolic processes. At 5.0 Gy dose, the fall in the enzyme activity was however marked and the dose proved to be lethal as no young animal survived after 3 days of exposure. The elevated levels of ATPase in the mature testis points to increased break down of ATP to generate energy for the metabolic processes in the irradiated testis. In immature rats, increased SDH activity and the reduced LDH activity in the irradaited testis indicates energy generation by the oxidative metabolism. The response of immature and mature rat testis was different. The decreased SDH activity and increased levels of LDH activity in the mature testis indicate impairment of the Kreb's cycle for energy production and the involvement of anaerobic pathway in generating

energy in the stressed tissue. Lactate dehydrogenase has been shown to play an important role in the mitochondrial lactate-pyruvate shuttle system to transfer reducing equivalent from cytosol to mitochondria for the generation of energy necessary for motility and survival of germ cells (Blanco *et al.,* 1976). Radiation-induced chemical and physiological alterations could result from the generation of reactive oxygen species during expsoure to ionizing radiation.

In the present investigation, modification of radiation-induced damage to rat testis with vitamin E treatment is clearly evident. The alterations in the activities of the different enzymes studied were in comparison less pronounced and the values were found to be near to the unirradiated normal controls. The higher activities of adenosine triphosphatase in the vitamin E treated irradiated testis at later intervals points to higher metabolism in the stressed tissue as compared to the untreated irradiated testis. Protective role of vitamin E in biological systems has been emphasized. Vitamin E inhibits the destructive peroxides of polyunsaturated lipids and reacts as a chain-breaking antioxidant (Diplock, 1983), thus helps maintain the integrity and strctural stability of the membrane systems. Kollman *et al.* (1969) have suggested that oxygen inducd membrane damage can be prevented by the presence of antioxidants at the time of irradiation. The protective role of α-tocopherols to the mitochondria by preventing the activation of lipid peroxidation and by maintaining the activities of TCA cycle enzymes, concentration of cytochormes and oxidation of succinate following isoproterenol administration (Ithayarasi and Shyamala Devi, 1998). In the present study, results clearly indicate that vitamin E pretreatment maintains the enzyme systems in the rat testis to a certain extent and helps reduce radiation damage.

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Effect of D-galactose on Brain and Heart of Mice

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ABSTRACT

Adult (5 to 8 months) male mice were injected with 5% D-galactose 0.5ml subcutaneously for 57 days. The brain regions-cerebral cortex, hippocampus, corpora quadrigemina, cerebellum and heart regions, auricle and ventricle of these mice along with control (0.9% saline 0.5ml) were used for the measurement of TBA reacting product in the form of MDA and fluorescence.

The level of TBA reacting substance was increased significantly in D-galactose injected mice in all the brain and heart regions. The fluorescence levels in all the regions of brain and heart were also significantly increased in D-galactose treated mice as compared to the normal ones.

Keywords: D-galactose, MDA, Fluorescence, Aging

Reactive oxygen metabolites are superoxide anion (O_2-), hydrogen peroxide (H_2O_2) and hydroxyl radicals (OH^-). Normal bochemical processes produce free radicals in the cells. Thus the cells are always subjected to the attack of free radicals (Witkop, 1985). These radicals are scavenged by various antioxidant enzymes such as glutathione peroxidase (De Marchena *et al.,* 1994), catalase (Chance *et al.,* 1979) and superoxide dismutase (Forman and Kennedy, 1976). Unscavenged free radicals exert peroxidative effect on polyunsaturated fatty acids of the membrane of cells as well as cell organelles (Schoeder, 1984). Malonic dialdehyde is formed in extensive membrane lipid peroxidation. These peroxidized membranes are digested by lysosomes. The free radicals also bring

about damage to lysosomes and lysosomal enzymes, making them inefficient which turn into residual bodies (Ivy *et al.,* 1984; Zs Nagy, 1987; Thakkar *et al.,* 1990). These are the lipofuscin granules. The nerve cells of the brain of old animals and man are loaded with lipofuscin granules which reduces the function of the brain (Few and Getty, 1967; Patro and Patro, 1992; Drach *et al.,* 1994; Terman and Brunk, 1998).

D-galactose is found to induce changes which resembles accelerated aging in mice (Song *et al.,* 1999). The aging model shows neurological impairment, decreased activity of antioxidant enzymes and poor immune responses. In the present work, effect of D-galactose injection on lipid peroxidation of brain and heart of male mice was studied.

Materials and Methods

Adult (5 to 8 months) male mice were used for the present study. The animals were supplied with mice feed and drinking water *ad libitum*. They were grouped as control and the treated mice. Control group received 0.9% saline 0.5 ml each day and treated group received 5% D-galactose 0.5 ml subcutaneously for 57 days. Each group consisted of 4 mice.

Preparation of Homogenate

Animals were sacrificed by cervical dislocation. The brain regions viz. cerebral cortex, hippocampus, cerebellum and corpora quadrigemina were dissected out. The heart regions, auricle and ventricle were also dissected out and minced in 0.9% saline. Various regions were homogenized in reaction mixsture (2 mg/ml) containing 75 mM potassium phosphate buffer (pH 7.04) 1mM ascorbic acid, 1mM $FeCl_3$ and 10ppm chlorotetracycline. The homogenates were used for the measurement of TBA reacting product in the form of MDA and fluorescence measurement (Robinson *et al.,* 1980).

Results and Discussion

TBA reacting product is describved in Table 1. Significant difference was noticed in TBA reacting level of normal and D-galactose treated adult mice. As compared to the normal mice, the

level of TBA reacting substance was increased in D-galactose injected mice and the increase was highly significant ($P < 0.001$).

Fluorescence levels in all the regions of brain and heart (Table 2) were significantly increased in D-galactose treated mice as compared to the normal ones. This increase was also highly significant ($P < 0.001$).

The end products of lipid peroxidation are known to induce cellular damage and have been shown to be responsible for oxidative free radical stress. The most abundant oxidative free radicals generated in living cells are superoxide anions and derivatives which induces peroxidation of cell membranes lipids. The main cause of the oxidative stress is deficient natural antioxidant defences (Bhattacharya *et al.,* 1999). Young mice can efficiently remove galactose stress, but stress is so intense that cells become unable to protect themselves against a free radical damage in galactose fed mice (Pillai *et al.,* 2002). The peroxidation leads to the damage of cell membranes. The membrane wastes are not digested properly due to insuffciency of lysosomal enzymes (Nakamura *et al.,* 1989). These wastes gets accumulated in the lysosomes and called lipofuscin granules (Brizzee and Ordy, 1981; Hammer and Braum, 1988).

Increase in the fluorescence in the brain and heart of D-galactose treated animals indicates lysosomes are unable to digest wastes and increase in lipofuscin formation takes place. Correlation between autofluorescence and lipofuscin concentration was shown by Marzabadi *et al.,* (1991) and Brunk *et al.,* (1992). Lipofuscin granules gather in lysosomes and may lead to cellular impairment, ultimately reducing the supply of large amount of hydrolysing enzymes. This may result iln inability of lysosomes to handle intralysosomal product of lipid peroxidation, which lead to formation of MDA (Brunk and Collins, 1981).

These observations clearly indicate that D-galactose administration brings about changes in brain and heart similar to aging changes and with this experimentation it is clear that D-

galactose can be very useful to establish the model of aging mice for aging research.

Table 1
Lipid Peroxidation in the Form of MDA nmoles/mg Wet Weight of the Tissue (Mean activity ± S.D.)

Organ	Normal (N)	D-galactose (D)	Statistical significance (N:D)
Cerebral cortex	9.3749 ± 1.4422	23.7979 ± 2.7617	t = 9.2590 p < 0.001
Hippocampus	12.2595 ± 1.4422	23.7979 ± 2.7617	t = 7.4073 P<0.001
Cerebellum	12.2597 ± 1.4422	18.7499 ± 1.6654	t = 5.8949 P<0.001
Corpora quadrigemina	15.1443 ± 2.7617	23.7979 ± 2.7617	t = 4.4314 P<0.001
Auricle	12.981 ± 1.665	25.9614 ± 2.3552	t = 8.998 P<0.001
Ventricle	12.981 ± 1.665	23.0768 ± 2.3552	t = 7.0 P<0.001

P<0.001 = High Significant

Table 2
Effect of D-galactose on the Fluorescence of the Various Regions of Brain and Heart (Mean activity ± S.D.)

Organ	Normal (N)	D-galactose (D)	Statistical significance (N:D)
Cerebral cortex	0.0135 ± 0.0057	0.05075 ± 0.012	t = 5.608 p < 0.001
Hippocampus	0.014 ± 0.0055	0.051 ± 0.0127	t = 5.355 P<0.001
Cerebellum	0.0122 ± 0.0054	0.04975 ± 0.0120	t = 5.702 P<0.001
Corpora quadrigemina	0.01275 ± 0.0068	0.05025 ± 0.012	t = 7.741 P<0.001
Auricle	0.0144 ± 0.0067	0.05125 ± 0.0115	t = 5.604 P<0.001
Ventricle	0.014 ± 0.0069	0.05075 ± 0.0118	t = 5.385 P<0.001

P<0.001 = High Significant

The fluorescence is given in units/mg protein/ml.

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Prevalence of Gastrointestinal diseases among Elderly adn their Dietary Habits with Specific Reference to Constipation

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ABSTRACT

Although healthy, free-living elderly individuals appear not much at nutritional risk, the elderly has a higher incidence of nutritional problems. The present study looks at the prevalent gastrointestinal diseases and its relation with dietary habits among 140 respondents from the two senior citizen clubs. Data were collected with the help of interviews and diet survey by recall method. Common gastrointestinal complaints were constipation (36%), acidity (40%), flatulence (31%) and lactose intolerance (20%) apart from occasional ulcers, diarrhea and anorexia. Females had more complaints as compared to males. Total intake of calories, water and fibre in the diet was low as compared to RDA. Number of meals, selection of foods and interval between meals was associated with the reporting of constipation and acidity. Nutrition education and extensive counseling regarding intake of adequate, well-balanced nutritious food, role of fibre and water in their daily diet will help to prevent most, if not all of the gastrointestinal diseases in the elderly.

Keywords: Aging, Gastrointestinal problems, Dietary habits, Fibre, Water intake.

Nutrition interacts with the aging process in numerous ways and the risk of nutrition-related health prblems increases in later life (Stephen *et al.*, 1998) Nutritional requirements are based on the physiological changes that take place during old age. Elderly often

have a reduction in intake that can produce malnutrition and impaired health. (Castro *et al.* 2002).

The current study specifically looks at the reported dietary habits, intake and its relation with occurrence of gastrointestinal problems. Studies have shown that dietary habits and specific food types can play a significant role in the onset, treatment and prevention of many gastrointestinal disorders. In many cases, diet can also play a role in improving patients' sense of well-being and the quality of life and in decreasing pain, suffering, and the costs associated with gastrointenstinal disease. Frequently occurring gastrointestinal diseases result in synchronous gut and nutritional compromise producing nutritional deficiencies.

There is increased evidence of several impaired gastrointestinal functions with aging. The changes in intestinal microfluora and reduced intestinal immunity of aged may favour gastrointestinal infections that are frequent in the elderly. (Hebuterne *et al.*, 2003). Numerous gastrointestinal complaints, from vague, indigestion to specific diseases as diverticulities or peptic ulcer sometimes effectively reduce food intake and curtail the needed nutrients. A variety of other illness limit food intake or utilization. Limited absorption of nutrients curtails nourishment still further.

Numerous psychological and social factors are associated with nutrition intake and health status. It is established that dietary intake lowers with the age due to poor appetite, health status, eating alone and gastrointestinal problems which result into weight loss and malnutrition. (Whitney, 1999, Morley, 2002, Ellroott *et al.*, 2002, Mann, 2002 and Shahar, *et al.* 2003). This may put them to the risk of micronutrient deficiency and associated complications like cardiovascular diseases, (Floor V.A. *et al*. 2003) osteoporosis (Lucy Cooper, *et al.,* 2003), constipation and laxative use appears to be as common in older populations worldwide (Hunter *et al.,* 2002). Apart from infections, lifestyle, habits and diet are critical aspects that determine the health of the elderly. The nutritional status has a major impact on diseases and offers great potential for prevention of chronic diseases like gastrointestinal diseases through healthy lifestyles.

The basic assumption of the present study is that gastrointestinal diseases which lead to micronutrient deficiencies or malnutrition can

be prevented to a certain extent, if the intervention in dietary habits and lifestyle pattern is planned. The study attempts the first step towards this goal and, therefore, was limited to find out the reported prevalence of various gastrointestinal diseases among population above 60 years of age and whether there is a link between current dietary habits and gastrointestinal diseases.

Methodology

The study was based on the sample of 140 respondents drawn from the two senior citizen clubs located in a middle income area from Pune. An equal number of male and female respondents was taken who were members of these clubs and aged over 60 years.

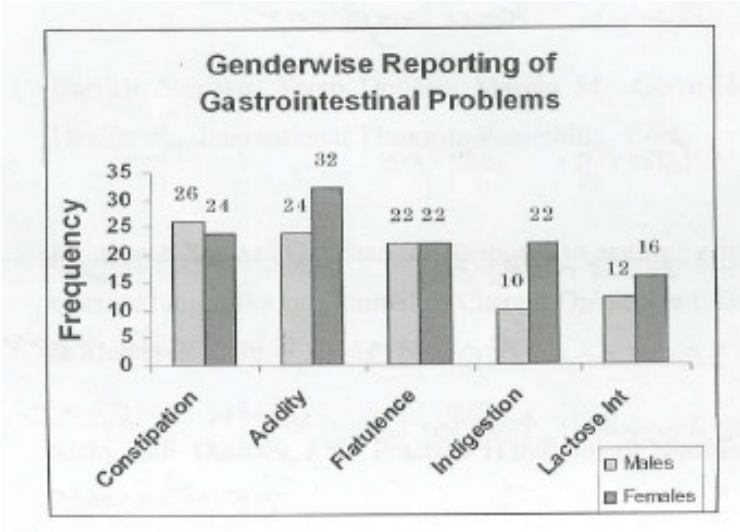
The subjects were interviewed using a semi-structured interview schedule including questions pertinent to the prevalence of and type of gastrointestinal diseases, their dietary habits, the fibre and water intake, and lifestyle patterns. The nutritional status of these members was also assessed by anthropometric measurements. Three day diet recall was taken and their nutritional adequacy was checked using food composition tables. The average nutrient intake was then compared with the recommended dietary allowances (RDA).

Results and Discussion

Prevalence of gastrointestinal diseases

It is clearly evident from the data that there was a higher prevalence of gastrointestinal complaints like constipation (36%), acidity (40%), flatulence (31%) and lactose intolerance (20%) among respondents. Other gastrointestinal complaints like *diarrhea* (5.7%), ulcers (2.8%) anorexia (7%), were less frequently reported. As noted from the graph 1 gender difference in the reporting of the symptoms was observed. A total of 130 symptoms were reported by 70 female respondents averaging to 1.85 complaints per female while 110 complaints (average 1.57) reported by 70 male respondents.

Nearly 20 per cent reported two gastrointestinal morbidities at a time, 14 per cent reported three and 4 per cent reported five disorders existing simultaneously. Acidity and indigestion were more common among females than males which was directly related by the respondents to the lack of physical activity and regular exercise. The male respondents were physically more active and regular exercise was a part of their daily routine.



Constipation was most frequently referred complaint and majority resort to laxatives. Isabgol was more commonly consumed laxative. Sedentary lifestyle can lead to increased risk of constipation. Exercise patterns of the older adults with constipation were carefully observed and analyzed. Majority (84%) of the subjects reporting constipation were physically active and exercised daily. The most popular type of activity was walking and practicing Yoga.

Assessment of nutritional status revealed that majority of the members (67%) fell in the normal range of the Body Mass Index. Majority (83%) female respondents were overweight as compared to males (17%).

Dietary Pattern

Most if not all, of the gastrointestinal diseases can be prevented by proper dietary and lifestyle modifications, especially complaints like constipation, acidity etc.

To establish a possible link between gastrointestinal complains and dietary habits, the nutritional status of the respondetns was also studied. The results of the studty showed that majority of the participants were vegetarians and followed a three meal pattern. Their total calorie intake was very less. Majority of them had

average intake of 700-900 kilocalories/ day. The choice of foods preferred did not provide all the essential nutrients.

Fibre intake in the diet facilitates easy bowel movements. Twenty five grams of fibre daily helps prevent cosntipation. In the present study majority of the respondent's intake was moderate which mean 3-4 helpings of fibre, green leafy vegetables and sprouts in a week. This was about 10 to 15 grams per day. The intake was not adequate mainly due to dental problems. Only 14 out of total 50 respondents reporting constipation took more than 25 to 30 grams of fibre in the diet.

Water intake of majority of the elderly with or without constipation was on an average one litre per day. The intake was less compared to the ICMR recommendations. The elderly must be encouraged to consume adequate quantity of water (1.5–2 litres/day). However, in those adults with constipation, the water intake was adequate. So a possible relation between water intake and prevalence of constipation could not be established.

Conclusion

The elderly are becoming an increasingly large segment of the population and their nutritional needs are of growing concern. It is becoming apparent that many of the chronic diseases of the elderly could be delayed or avoided by maintaining good nutrition throughout life.

The high prevalence of gastrointestinal diseases among elderly can be attributed to their dietary habits and lifestyle patterns. When food habits of senior citizens must be changed, adjustments require great tact and patience on the part of the health care professionals. Nutrition education and extensive counseling of the senior citizens regarding intake of adequate, well-balanced nutritious food items, plenty of fibre and water in their daily diet will help to prevent most, if not all of the gastrointestinal diseases in the elderly.

However, it is felt that more comparative studies are needed to further validate the role of diet in prevention of gastrointestinal diseases. Hence, with appropriate replacement of nutritional deficiencies most of these problems can be taken care of. Therefore, maintaining nutritional status is a cornerstone of preventive medicine in caring for older people.

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Geriatric Depression : A Clinical Update

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ABSTRACT

This review aims, to provide the basic clinical features, the etiology of geriatric depression and the various treatment modalities available to tackle the problem of elderly generation. In geriatric depression, it is not enough to get well, but it is staying well that matters. Women outlive men and the former outnumber the latter for all the types of depression. Presence of hypogonadism and thyroid abnormalities in the elderly risk factors for geriatric depression is widely suspected, besides cerebrovascular and neuroanatomical pathways. Depression is more common in left hemisphere strokes and is more common when lesions are anterior than posterior. Unfortunately very few elders admit the presence of depression. Most of them present with somatic complaints, multiple aches and pains and a large amount of anxiety, fear and hypochondriacal symptoms. A sizable depressives complain of benign recurrent pain not responding to any medication.

Keywords: Geriatric depression, Hypertension, Functional disability, Quality of Life, Gender differences, Management of depression.

In today's modern age, our population is growing at a fast pace. The global population in India and worldwide is growing older day by day. With increased facilities of health care and a better arsenal to combat disease, the longevity of humans is prolonged. The population has gained nearly 30 years of life expectancy this century (Lebowitz *et al.,* 1998). By the year 2020, the number of people worldwide over the age of 65 years would be doubled and above the

age of 80 years would be trebled. In a recent census in India, it was noted that 6 per cent of the population is above the age of 65 years and this figure shall soar to 12-15% by the year 2025 (Channabassavan, 1987).

Depression in elder people is a significant health problem. It is a cause of unnecessary suffering to those where the illness is unrecognized and untreated and it burdens families and institutions that are caring for the elderly. Despite its widespread prevalence and seriousness, depression in the elderly is often underappreciated. Despite a substantial body of research, depression in this population is attributed by many to changes that occur in normal aging (Lebowitz et. al., 1997). This article aims to provide the basic clinical features, the etiology of geriatric depression, the current research work being carried out in the field and the various treatment modalities that have been rendered safe in the elderly to tackle this serious problem.

Certain General Features of Depression in Late Life

Geriatric depression can be a very heterogenous condition. The onset in old age may be early brought over from an unresolved episode of adult or middle age or there may a fresh episode that ensues a little later in old age. Depressed mood as a symptom is rarely reported in late life. The emphasis is on somatic symptoms, hypochondriacal fears, insomnia, headache, neckache and backache in many (Gallo *et al.,* 1994).

Another central concern that often troubles the patient with geriatric depression is the presence of co-morbid medical illness. Hypertension, diabetes, arthritis, heart disease and respiratory problems are rampant in old age and serve to cloud the clinical picture of depression. They have a significant detrimental effect on the longitudinal course and outcome of geriatric depression and cause a strong independent effect on functional disability of the individual. Geriatric depression thus needs early diagnosis and treatment to improve the quality of life and prevent premature deaths of the elderly (Lyness *et al.,* 1995, Alexopoulos *et al.,* 1997). An important subset of depression emerging in late life is termed as

vascular depression. This involves minute lesions of the basal ganglia, prefrontal, frontal and temporal regions of the brain. Prevention of vascular complications in late life and prophylactic precaution against stroke may often prevent this depression (Alexopoulos *et al.,* 1997).

The spectral concept of psychiatric disorders has recently been revoked and there is a growing testimony that depression is a spectral disorder rather than one clinical entity. There is an increased prevalence of sub-syndromal depression among the elders in the community. Sub-syndromal depression refers to depressive symptoms that pose an increased risk for major depression, physical disability and worsen the course of medical illnesses present though; the patient never meets the diagnostic criteria of either major depression or dysthymia (Koenig and Blazer, 1996).

An important feature evolving out of hormonal research is the presence of hypogonadism as a risk factor for geriatric depression. Depressive symptoms have been attributed to menopause induced hormonal changes in women and due to a decrease of testosterone in men. Data of hormone replacement therapy in alleviating depression in both men and women is inconclusive (Stone and PearIstein 1994, Seidman and Walsh 1999, Shores *et al.,* 2004, Delhez *et al.,* 2003).

While treating geriatric depression, our goal is always to achieve a total remission of symptoms, prevent relapse and recurrence and improve the overall quality of life and the functional capacity of the individual. In geriatric depression, it is not enough to get well but it is staying well tht matters.

The etiology and clinical features of geriatric depression

Since years, poets, philosophers, theologians, physicians, psychiatrists and scientists have written about the etiology of geriatric depression. Many of the observations put forward have changed the way psychiatry looks at geriatric depression and many others have been dismissed as frivolous.

Females more than males

A biological predisposition to geriatric depression is known. Worldwide, women outlive men. In the world population census 1995, it has been noted that over the age of 65 years, there are 147 women for every 100 men alive. In addition to this, there is a vast interplay of hormonal factors that predispose women to depression. The most striking and consistent finding in psychiatric epidemiology all over the world is that women outnumber men for all types of depression (Whooley and Browney, 1998).

The effect of cerebrovascular disease

It is well known that cerebrovascular disease may predispose, precipitate or perpetuate some late life depressive syndromes. This has been grouped under the term late life vascular depression that encompasses all kinds of depression caused by diverse vascular pathologies. There is a high incidence of cerebrovascular disease in patients with geriatric depression and the biological changes that result predisposes these individuals to depression (Post and Schulman 1985, Luber *et al.,* 1996).

Stroke with neurological signs and symptoms is noticed in patients with geriatric depression. Silent stroke without any neurological signs and symptoms is also very common. In a Japanese sample, it was noted that silent cerebral infarction was common in 83 per cent of depressives above the age of 65 years (Fujikawa *et al.,* 1993). Thus, vascular brain lesions have great significance in geriatric depression (Ryan *et al.,* 1994).

Neuroanatomical correlates

The main pathways implicated in the causation of depression in late life is the cortico-striato-palido-thalamo-cortical pathways. The lesions commonly involve the subcortical structures along with the frontal, prefrontal and the temporal regions of the cerebral cortex. There is a definite role of subcortical structures in the pathogenesis of late life depression. Depression is more common in involvement caudate nucleus than with lesions of the thalamus (Starkstein *et al.,* 1988). Most geriatric depressives have silent cerebral infarctions in perforating artery territories and many have white matter hyper-intensities predominant in the frontal and the subcortical areas

(Coffey *et al.,* 1990). Reduced size of the head of the caudate nuclei and the putamen have also been noted (Krishnan *et al.,* 1992).

Depression is more common in left/dominant hemisphere strokes and is more common when the lesions are anterior than posterior. However, vegetative signs are more common when the right hemisphere is involved (Starkstein and Robinson, 1993, Finklestein *et al.,* 1982). A number of neuroanatomical structures have been implicated in geriatric depression. The left prefrontal areas have been proposed to cause depressed mood while transient mood abnormalities have been attributed to the anterolateral prefrontal cortex, the cingulate cortex, the left medial frontal cortex and the left anterior limbic system (Pardo *et al.,* 1993). Damage to the orbitofrontal regions may lead to disinhibition, irritability and diminished sensitivity to social cues. Anterior cingulate cortex involvement causes apathy and lack of initiativeness. All these symptoms form a pivotal part of the vascular depression syndrome (George *et al.,* 1994).

Hypothesis of the vascular depression syndrome

There are two hypotheses to explain the vascular depression syndrome. The first is that small infarcts that disrupt critical pathways in the maintenance of normal mood. The second is that there is an accumulation of vascular lesions that exceeds a threshold for depression. Thus, vulnerability to geriatric depression may be conferred by the lesions themselves or by broader cerebrovascular mechanisms that encompasses pathways relevant to depression itself (Krishnan and Malcolm, 1995). Research is needed to clarify the pathways implicated in vascular depression, the brain dysfunction and the presentation of depression including the age of onset and the contribution of non-biological factors.

Neurotransmitter theories

Neurotransmitters like acetylcholine, serotonin, dopamine and nor epinephrine have been implicated in depression across all ages. They have a major role in geriatric depression but an important noteworthy feature is that all these neurotransmitters are essentially of the frontostriatral circuitry.

Depression and medical illness

The link between late life depression and medical co-morbidities that are associated with it leads to two pathways. The path from medical illness to depression reflects the general mechanisms of stress, disability and loss as well as more specific physiological mechanisms related to medical disease, adverse drug effects and endocrine and metabolic effects. The path from depression to medical illness reflects self-neglect, decreased adherence to medical treatments, maladaptive heatlh related behaviours and altered autonomic effects. The two paths interact and constitute a viscous cycle. Knowledge and understanding of these areas could initiate virtuous cycles benefiting both physical and mental health in the long run.

Drug induced depression

Elders with co-morbid medical illness are consuming a large number of medicines with diverse actions on various systems. Beta blockers, calcium channel blockers, steroids, sedative-hypnotics and angiotensin converting enzyme inhibitors are the commonest drugs used in this population (Patten and Love, 1997). There is also an extensive amount of evidence of subclinical thyroid abnormalities in the elderly as being a risk factor for depression coupled with an earlier mentioned observation that depressive symptoms are more common in the presence of gonadal hormonal deficiency in elderly men and women (Woeber, 1997). Studies on the association between medical illness and depression could lead to further large scale studies on prevention and treatment effectiveness in specific patient populations. The treatment of geriatric depression shall preserve the health of elders and prevent the accelerated physical decline that is being observed in the elders.

Certain common observations

The cardinal features of depression in the form of depressed mood, poverty of ideas and psychomotor retardation are seen in depression across all walks of life, but the presentation in old age deviates a little from the routine. Very few elders admit the prsence of depression. Many of them present with somatic complaints,

multiple aches and pains and a large amount of anxiety, fear and hypochondriacal symptoms. Up to 58 per cent of elderly depressives complain of benign recurrent pain not responding to any medication (Lindsay and Wycoff 1981).

Another major clinical presentation is insomnia. Around 90 per cent of patients above the age of 60 years complain of insomnia at some point of time or other (Mils and Dement, 1980). The presence of sleep disturbances are known to prolong depression and may worsen the longitudinal course of geriatric depression (Buysse, 2004).

Two psychological factors in the causation of depression are worth mentioning at this point of time. The first is bereavement i.e., the death of a near relative. In case of the elder individual, it is very often the spouse with whom he has spent his lifetime. In some, there is the death of a child which is even more painful and may lead to depression. The second factor is the presence of 'the empty nest' when the youngest child leaves home for greener pastures leaving behind aged parents staring at the walls on an empty house.

Forgetfulness is a part of normal aging. Often forgetfulness is a symptom of depression seen in the elderly as a presenting feature in depression and as a part of depressive pseudodementia. These patients may be misdiagnosed as dementia or age associated cognitive impairment and may be untreated for years to come (Shelbourne *et al.,* 1994). In a study on geriatric depression and its symptomatology it was noted that forgetfulness was the symtom of presentation in 26 per cent of cases (Kalska *et al.,* 1999).

The risk of suicide

The risk of suicide in the elderly is as great as across any age with depression. The suicide rate in the age group of 75-85 years is 5 times greater than that of the normal population. More males than females commit suicide and do so silently without informing others, leaving a suicide note claiming suicide as their alibi and escape from suffering (Conwell and Brent, 1995).

The longitudinal course and outcome

Geriatric depression is a recurrent illness, a chronic one associated with increased health care utilization, amplification of the disability of concurrent medical illness, decreased quality of life, increased suicide risk and cognitive impairment. Thus the treatment of geriatric depression has to be medication combined with a lot of psychotherapy to cause not only transient symptom remission but to maintain continuous wellness. The success of combined treatment i.e., medications and psychotherapy in the elderly attests the interplay of biological and psychological factors in geriatric depression. The greater medical burden of elderly patients, frequency of bereavement and role transition issues along with impaired quality of life and disability suggests that a combined treatment approach is the best to deal with depleted psychosocial resources characteristic of geriatric depression (Cole and Bellevance, 1997).

The management of geriatric depression

The treatment of geriatric depression can be divided into 3 phases- acute, continuation and maintenance phases. The main goal of the acute phase is to achieve symptom remission. The continuation phase is to prevent relapse into the same episode with the same symptoms and the aim of maintenance treatment is sustaining the recovery and preventing recurrences. The symptoms require active management more so when they interfere with everyday functioning.

There is a paucity of data with regard to drug trials. These that are randomised and controlled in geriatric depression. Majority of the people recruited in the trials are between the age of 65-69 years and very few are above the age of 75 years (Slazman *et al.,* 1995). We now look at the various drugs available to combat geriatric depsression.

Tricyclic Antidepressants

Till late 1980s, the tricyclic drugs were the most commonly used drugs for geriatric depression. The drugs Amitryptiline, Doxepin and Nortryptiline have accounted for 80 per cent of the total usage. Doxepin is the preferred molecules by experts due to the relative lack of side effects and the cardiac safety of the drug.

Nortryptiline is preferred over Amitryptiline due to the less orthostatic hypotension noticed. It is a drug that has been used in over 22 clinical trials and the only drug that has been extensively studied in very elderly people i.e., over the age of 80 years (Schneider *et al.,* 1994). Medication compliance for tricyclic drugs among the elderly is often difficult to achieve as they often experience the anticholinergic side effects in greater proportions than the adult population (Keller, 1978).

Selective Serotonin Reuptake Inhbitors

To date, there have been 28 published clinical trials of SSRIs in geriatric depression. There are 12 studies of fluoxetine, 8 of paroxetine and around 5 multi-centre trials of Sertraline making up nearly 3000 cases of geriatric depression. The duration of treatment in most studies had been 8-12 weeks. Citalopram and Escitalopram have also been used in the elderly and there is relatively no major difference between the efficacy of individual drugs in this group, while combating geriatric depression; but Sertraline and Citalopram remain the favourites (Schneider, 1996).

Other Drugs

Venlafaxine is a drug that has been under-researched in geriatric depression. The only potential of worry in the drug is the report that it causes a rise in blood pressure at high doses and must be used with caution in patients with hypertension. Its effect on blood pressure and heart rate may be minimal in otherwise healthy depressed elderly patients but monitoring is needed in those with a previous history of cardiovascular disease (Cunningham *et al.,* 1994). Mirtazapine, Bupropion and Tianeptine along with Mianserin are the other drugs reported efficacious in small trials or anecdotal case reports (Kane *et al.,* 1983, Hoyberg *et al.,* 1996).

Psychotherapy

Psychotherapy is of paramount importance in managing geriatric depression due to the broad range of functional and social consequences of late life depression. Individual therapy is best suited and any form of therapy of beneficial. There is a general consensus worldwide that a combination of medications and psychotherapy is

the best treatment of geriatric depression (Scogin and McElreath, 1994). The approaches suggested are psychodynamic, cognitive behaviour therapy and interpersonal therapy; although eclectic methods are the best and the choice of a particular therapy is best left to the personal preference of the treating psychiatrist.

Electroconvulsive therapy

It is still the most effective treatment for any form of depression despite all the controversy that surrounds it. It is the best mode of treatment in patients with a refusal to eat, delusional depression and the presence of psychotic features. It is a must for use in patients with suicidal ideation and psychomotor slowing where most of our treatments fail. Remission rates up to 85 per cent have been noted in elderly patients where this treatment has been used (Stoudmire *et al.,* 1998). The absolute contraindications are very few. ECT can be safely administered in patients with concomitant medical illnesses after a thorough work up. The presence of a recent myocardial infarction or severe uncontrolled hypertension must not be overlooked. The most common complications with ECT use in patients over 70 years of age are confusion and transient hypertension or hypotension (Tomac *et al.,* 1997). Maintenance of ECT is also useful in the elderly when given once a month or once a fortnight combined with an antidepressant.

Conclusions

Much more is needed to evaluate clinical outcome in geriatric depression. Solid foundations need to be established and there is a dearth of practical guidelines that need to be formulated for the management of depression in this vulnerable population. Our elders have struggled all their lives so that we may enjoy a better future. It is our duty to give our due back to them. As with people of any age, older people need our full efforts in the recognition, diagnosis and treatment of depression in their lives.

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The Influence of University Education on Successful Ageing in a Nigerian Sample

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ABSTRACT

This study was designed to assess the impact of university education on successful ageing in Nigeria. The rationale for this objective was based on our literature search that revealed education as one of the correlates of successful ageing in the Western part of the world. It is considered reasonable to ascertain the influence of this factor in our effort at developing a reliable and valid theory of happiness at old age in Nigeria. A total of six hundred (600) older persons from Osun, Ondo and Oyo states participated in this study. The subjects included two hundred and eighty six (286) males and three hundred and fourteen (314) females. Their ages ranged from sixty (60) to one hundred (100) years with a mean age of 65.40 and standard deviation of 5.83.

The major data gethering instrument employed in this study was the "Successful Aging Scale" (SAS) developed by the author. One way ANOVA reveals that there was a main effect of the level of education on the subjects total scores on the SAS (F {4.595} = 7.430, P < 0.001)

Keywords: University education, Successful Ageing, Promotion of healthy ageing, Younger generations, Quality education.

The ideal outcomes of the ageing process or what could be termed as "successful ageing" according to Havighurst (1961) have been addressed by scholars in the area of gerontology for some years now. Concepts such as morale, life satisfaction, adjustment or most generally, subjective have been employed in the study of this important aspect of the aging process. Successful ageing has been

defined severally. A thorough review of gerontological literature has revealed that there is no single well-accepted definition or model of successful ageing that has stood the test of time. According to Havighurst (1961), successful ageing means "adding life to the years" and Khan (1987) defined it in terms of multiple physiological and psychosocial variables. Ryff (1982) defined successful ageing as positive or ideal functioning related to developmental work over life course. Some other definitions are based on strategies for coping (For example, Fisher (1992). Gibson (1995) viewed successful ageing in terms of an individual reaching his/her potential and getting to a level of physical, social, and psychological well-being in old age that is acceptable to both self and others. Moreover, in the Encyclopedia of Aging, Palmore (1995) argued that a comprehensive definition of successful ageing should centre on survival (longevity), health (lack of disability), and life satisfaction (happiness). Palmore's position is in line with Helme's (2000) assertion that successful ageing involves keeping the adverse effects of aging to a minimum while maximising the benefits and ensuring satisfaction with quality of life.

Moreover, some studies have been conducted in an attempt to have an empirical understanding of successful ageing. For example, Ryff (1989) found the following as criteria of successful ageing among middle-aged persons: self confidence, self acceptance, and self knowledge, while acceptance of change, sense of humour and enjoying life were emphasized by older persons. This study agrees with that of Novak (1983). In his study of those he described as "best" older people, that is, those who were healthy, happy and active, Novak identified challenge, acceptance and affirmation as the three stages that define a positive development from mid-life to old age. According to him, those believed to have exemplified a good age were those who saw old age as a challenge, accepted the prevailing conditions of old age and affirm that life continues in spite of its odds. Still in the same direction, Schaie and Willis (1996) in their own study of the ageing process equate successful aging to optimal aging. Citing Baltes and Baltes (1990) and Carstensen (1992), Schaie and Willis maintain that optimal ageing involves a general strategy of being selective in one's efforts and using alternative strategies and activities to compensate for the losses associated with the ageing processes. In addition, in their study of the

personal experience of growing old, resources and subjective well-being, Steverink, Westerhof, Bode, and Dittmann- Kohli (2001) found that subjective health, higher income, less loneliness, higher education and greater hope were positively associated with continuous growth. The above theoretical and empirical conceptions of successful ageing suggest that as the population of older persons becomes increasingly diverse defining the concept may become more difficult. A way out of this problem according to Bearon (1996) may be to return to an early (and continuing) theme in research on successful aging, that is, that successful ageing is in the eye of the beholder. In this framework, successful ageing is measured with indicators of subjective well-being such as life satisfaction, happiness, morale, contentment, perceived quality of life or other related measures of negativity such as depression and anxiety. With reference to Bearon's position therefore, this study situates successful ageing within the confines of subjective well-being of older persons.

Some factors have been noted as correlates of successful ageing. These factors that have been subjects of study for sometime now include, health and physical disability (for example, Larson, 1978; Perlmutter and Hall, 1992; Bull and Aucoin, 1975; Larson, 1975; Palmore and Luikart, 1972; Spreitzer and Synder, 1974), social economic status (Palmore and Luikart, 1972; Spreitzer and Synder, 1974; Kivett, 1976; Medley, 1976), age, sex (Lawton, 1972; Harris, 1975; Neugarten, Havighurst and Tobin, 1961), employment (for example, Palmore and Luikart, 1972; Thompson, 1973; Jaslow, 1976), marital status ((for example, Lawton, 1972; Palmore and Luikart, 1972; Spreitzer and Synder, 1974; Morgan, 1976), transportation and residence (Cutler 1972, 1975), activity and social interaction ((Neugarten and Tobin, 1968; Wylie, 1970; Holahan, 1988, Edwards and Diener, 1995; Leelakulthanit and Day, 1993; Larson, Mannell and Zuzanek, 1986).

The above studies regarding the meaning and correlates of successful ageing represent what obtains in the Western part of the world and since inquiries into the understanding of the dynamics successful ageing have been culture-specific (Torres, 2001), it is only reasonable to find out the impact of these factors on the life satisfaction of the old in developing countries such as Nigeria. Such

studies would enable us to understand more about the dynamics of successful ageing in the Nigerian context. To this end, this study was designed to assess whether universty education has any impact on older persons' feelings of life satisfaction or 'successful ageing' using a Nigerian sample.

Method

Subjects and procedure

A total of six hundred (600) older persons from Osun, Ondo and Oyo states participated in this study. This sample was selected using a multi-stage sampling procedure in which the state capitals were divided into 4 clusters representing elite, traditional, mixed and migrant locations. From each cluster, two major streets were selected and after which housing units from which subjects were picked, were selected using the systematic random sampling procedure based on a k-factor, where k=N/50. The subjects included two hundred and eighty six (286) males and three hundred and fourteen (314) females. Their ages ranged from sixty (60) to one hundred (100) years with a mean age of 65.40 and standard deviation of 5.83.

Instrument

The major data-gathering instrument employed in this study was the 'Successful Aging Scale' (SAS) developed by the author. The scale is divided into two sections, A and B. Section A covers the demographic attributes of the subjects, in terms of sex, age, marital status, educational level, present occupation and religious affiliation. The B-section consists of 26 items in statement forms covering the following identified indicators or predictors of successful ageing: children, finance, housing, employment, social relationship, social participation, health, mobility, fulfilment of needs and life satisfaction. Subjects are expected to respond to each of these statements on Likert-type response alternatives. These response alternatives are scored: 'Yes' = 3; 'Not Sure'= 2; 'No'= 1 and 'Not Applicable'= 0 for positive statements and 'No'= 3; 'Not Sure'= 2; 'Yes'= 1 and 'Not Applicable'= 0 for negative statements. Therefore, total scores can range from 0 to 78. High scores on this test represent successful ageing. The reliability and the validity status of the scale are given below.

Reliability measure of the scale

Two methods were used to test for the reliability status of the SAS. These methods are the Split-half and the Cronbach's alpha methods.

Split-half method: Data analysis of the responses of a different set of 100 elderly persons aged 60 years to the SAS using the Guttman and the Spearman-Brown techniques reveals the following reliability values: Guttman split-half = 0.70 and Spearman-Brown split-half = 0.71.Cronbach's alpha method yielded an alpha coefficient of 0.77.

Measures of validity for the scale

Construct and convergent validity: These were assessed using the **World Health Organisation Quality of Life Scale (WHOQOL-BREF)** and the **Satisfaction With Life Scale (SWLS)** developed by Diener,E., Emmons, R.A., Larsen, R.J. and Griffins, S. (1995) validity measures. These were established by correlating the older persons' total scores on the SAS with their total scores on the WHOQOL-BREF and the SWLS. Results revealed that SAS correlates highly with these scales. The correlation coefficients are shown in the Table below:

Table 1

Analysis of correlation between the SAS, WHOQOL-BREF and SWLS

	SAS	WHOQOL-BREF	SWLS
SAS	—	—	—
WHOQOL-BREF	.662**	—	—
SWLS	.684**	.725**	—

** Correlations are significant at p = 0.01 level (2-tailed).

Results

Our analysis using the One-way ANOVA reveals that there was a main effect of the level of education on the subjects' total score on the SAS ($F\ \{4.595\} = 7.430$, $p < 0.0001$). Table 2 below shows the summary of this finding:

Table 2

One-way ANOVA on the influence of education on subjects' score on the SAS

SAS score		Sum of squares	df	Mean square	F	Sig.
	Between groups	1919.607	4	479.902	7.430	0.00
	Within groups	38431.666	595	64.591		
	Total	**40351.273**	**599**			

Further examination of this result using Tukey's HSD revealed that subjects with university level of education (n = 122, mean = 66.0738, SD = 6. 4040) recorded higher mean score on the SAS than those with primary level of education (n = 109, mean = 61.5229, SD = 8.4739, MD = 4.5508, SE = 1.059, p < .0001); those with secondary/technical education (n = 152, mean = 61.4539, SD = 7.1603; MD = 4.6198, SE = 0.977, p < .0001) ; those with post secondary education (n = 162, mean = 61.7963, SD = 8.5764; MD = 4.2775, SE = 0,963, p < .0001) and those with no form of Western education (n = 55, mean == 63.1818, SD = 10.6547, MD = 2.8920, SE = 1.305, p <.0001)

Discussion

From the results of this study, it is evident that education has a main effect on subjects' total scores on the SAS. Specifically, it was revealed that subjects with university level of education recorded a higher mean score than those with less than university education. This suggests that subjects with university education appear to be ageing more successfully than those with less than university education. The reason for this could be explained in terms of the job opportunities available to those with university education. For instance, Palmore and Luikart (1972), Spreitzer and Synder (1974) and Medley (1976) have reported the interaction effect of income, occupational status and education on well being. The significance of education was also revealed by our analysis which shows that

subjects with University education appears to be ageing more successfully than those without any form of Western education.

The findings of this study point to some policy implications. According to the United Nations (2001), a clear priority target for old-age policies is the younger generations. These are individuals who may have to keep abreast of the development in fast changing societies and who will need to cultivate healthy life styles, have foresight, and be able to maintain social networks typical o those that have aged successfully. Achieving these goals or objectives by these set of people requires some level of literacy which should be enhanced by educational policies that would allow for affordable and qualitative education at all levels of our educational system. This situation would afford these individuals the opportunity to be knowledgeable about and be sensitive to the factors that allow for successful ageing. Having access to education could also assist in sensitising people to the need to prepare and plan early enough for retirement. This becomes important as adequate pre-retirement planning could ease financial problems often experienced at old age. The role of counselling centres, workshops, conferences, radio and television jingles in this regard cannot be over emphasised.

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Assessing Quality of Life in People Over Eighty Years

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ABSTRACT

Research was undertaken to study the quality of life (QOL) of oldest old (above 80 yrs.). To avoid extraneous and diverse factors group of old selected had ethnically and anthropologically a common descent. Study was conducted in a planned phase. Number of parameters were looked in to, which suggested the QOL. In objective study demography, physical and mental well being, cultural impact, food and family interactions and fiscal standings were investigated. Subjective study was by way of interrogations. It was observed that in middle class families, QOL of elderly is satisfactory on an objective scale. However subjective study did not yield a satisfactory picture. In conclusion, authors found that objective and subjective study of QOL can be at variance. Moreover no firm definition of QOL can be outlined.

Keywords: Quality of Life, Objective parameters, Cultural impact, Numerical conversions, Domains of QOL, Selective survival.

The fantastic advnacement of research in promoting health has a direct impact on the life expectancy of human beings. Also the research at the genetic and molecular level has given us the impetus that the day is soon to come (in next 20 to 50 years) when human beings can have a life span of 150 to 200 years. In India there were 12 million people at the age of 60 years in the beginning of 20th century. In 1961, it was 24 millions, in 1991 it reached a figure of 56 millions and at the end of 2000 AD, it touched 70 millions. It is estimated that this figure would rise to 180 millions by 2025 AD. This stupendous rise in older pouplation has posed serious problem

to the world Health Organisation which is now wholly committed to tackle this enigma. Motto is - old person should be able to lead a good quality life (QOL) i.e. successful ageing. QOL is a complex phenomenon. In fact, no definition can be foolproof or ideal because elderly people are characterized by heterogeneity and dissimilarity. Further definition of QOL of elders is completely dissociated from the other groups of human life. Board based idea of quality of life of old comprises, physical fitness (free from diseases), mental or cognitive efficiency, social assimilation, cultural effectiveness, religious, financial stability and familial predisposition (of course this list of criteria is far from complete). Thus simple health care systems i.e. for prevention and cure are only part of the quality of life of aged, meaning thereby that an old with good physical fitness may not be leading a good quality life. The definition stated above is a variant from the most widely accepted definition of (Patric and C Ernicsm, 1993, Browne *et al.* 1994, Farqukar I 1995, Cummin 1997, Testa and Simonson 1996, Girmley *et al.* 2000,). However there is a general agreement that only holistic aproach towards promotion of physical and mental health, is the final answer for the good quality of life.

Further in the present era, time has come to classify the aged people in different groups because of the enormous increase in life expectancy. The following grouping is universally acceptable.

Groups	Age	Status
A	60 - 70 Years	Young Old
B	70 - 80 Years	Old Old
C	Above 80 Years	Oldest Old

In our research work, oldest old volunteers were selected. (S5)

METHODOLOGY

Inspite of tremendous upsurge in research in the study of QOL of elders, no uniform methodology has been evolved so far.

Sample

It was decided to select the elders of age eighty years and above. For this, Association of Senior Citizens Forum (Nagpur) was contacted and the sample was collected from three distinctive areas of city of Nagpur. Each zone represented approximately fifteen

number. The sample size thus came to forty five (33 males, 12 females).

The subjects of the sample were similar ethnologically and social anthropologically as far as cultural upbringing was concerned. Selection of sample was on the basis of free accessibility and not on the method of random sampling. Study of the subjects was concentrated on QOL and no demographic analysis was endeavoured. Cohort as mentioned above was belonging to Nagpur City of Maharashtra, State, India.

To find out the QOL, volunteers were approached objectively under various parameters and also were screened subjectively. The outlay of work is given below.

Objective Scale

QOL was studied under the various heads which are shown in the following table -

Table 1

Domains of QOL

No.	Parameter	Status
1.	Physical status	Excellent, Good, Bad
2.	Mental, cognitive or cerelrity	Alert, Normal, slow
3.	Cultural development	Classical, Normal, deficient
4.	Familiar absorptions	Accepted, indifferent, rejected
5.	Food factor	Over eating, normal, under
6.	Fiscal status	Excellent, Good, Bad
7.	Physical investigations	Normal, Abnormal

The results of each parameter, were then converted in to numerical scale as underlined.

Numerical Convertion

Grade I : Excellent, alert, fair, classical - 100 marks Acceptable, excellent, Normal

Grade II : Good, normal, average, normal - 50 marks Indifferent, normal, good.

Grade III : Bad, slow, secluded, deficient, rejected, average - 25 marks over eating, abnormal

N.B. : Words used in each grade are iln sequential form as per status described in table "in Domains of QOL".

Subjective Scale

This assumes great importance in judging the QOL of elders. Therefore each elderly was invited separately to express frankly about their life through self introspection. Each meeting was arranged with the research worker who first prepared the psychological base of giving confidence and relaxation to the mind of elder interviewed.

Some of the sample questions put to the elders are given below -

1. Do you feel Healthy !
2. Do you feel life is worth living !
3. Do you have quarrels amongst family members or in society
4. Do you pass your time happily or you get bored !
5. Do you suffer insults or humiliation.
6. Do you feel lonely and discarded !

The expressions of each elder, interviewed separately, was analysed by the research worker and marking of QOL was done by forming his/her opinion. QOL was described under very good, good and unsatisfactory categories.

The logistics of the research project was as follows -

Stage I : Each elder person was visited at his/her residence and was subjected to questionnaire to gather information on their physical demographic data, social, cultural, familial stauts etc.

Stage II : Small groups of ten from the sample were collected at one convenient place and was subjected to pathological and biochemical investigation. Thus in five groups, this investigation was completed.

Stage III : These groups were then taken in a van, after collecting them from the places of their residence, to the hospital and clinics for screening them for invasive and non invasive techniques like X-rays, ultrasonography, E.G.C. etc.

Stage IV : Same group was then clinically examined by Senior Physician of the study group.

Findings

The following is the factual account of the process of exploration of the QOL of the oldest old.

In the first meeting of the research group the hurdles that the group may encounter during investigation were discussed. Two points emerged prominently. One was the extent of cooperation and willingness of volunteers subjected for study. The second point was the appropriation of suitable timings for conducting research. To the delight of research group, every elderly was over enthusiastic to offer himself for examination. The problem of timings for bringing the volunteers together for research was tact fully handled (overcoming adamancy and idiosyncrasies) by one of the members of research group.

Objective Findings - These are described under the following heads-

A. **Demographic data**

This may appear superfluous and unrelated to the nucleus of investigation namely QOL. Nevertheless such information is quintessential of any research on elderly.

Table - 2
Showing demography of SS.

DATA	MALE	FEMALE
AGE		
80-85 yrs	22	7
85-90	9	4
Above 90 yrs	2	1
HEIGHT		
5 ft <	4	4
5 ft >	26	8
7-6 ft <	3	0
WEIGHT		
50 kg <	10	6
50 kg >	18	6
60 kg >	5	
EDUCATION		
Graduate	20	4
Post Graduate	8	2
Matriculate	5	6
MARITAL STATUS		
Married	31	10
Widow/Widower	5	9

Single	2	2

The group under investigation exhibited a standard demography restricted to the state of Maharashtra as regards height and weight. Considering the selection of elderly for this research project, 100% literacy in the group was not a surprise (includes females also). However the incidence of being single was high in spinsters (20%) but was comparatively low in Bachelors (6%). The group presented 83.3%. Widows while 16.6% were widowers.

B. **Selective Survival Factor**

It can be observed that pendulum of life span oscillates in the range of 80 to 85 years. It is 66.6% (16 No.) in males and in females, it is s58.3%. It is a healthy sign that in a small study like this one, there were three persons above the age of Ninety years. It was interesting to note that though whole group showed an extended life span, only 48.48% had a genotype of their birth cohorts in males and 25% in females.

C. **Physical Exercise**

Every individual was taking physical exercise in some form or other. Morning walk was the most popular exercise in both male and female (males and females 66.6%). Yoga though has extensive acclaimation world over, had an insignificant place in this sample.

Mode of Exercise

1. Regular Walking for more than 1 Kilometer - Males 22, Females 8
2. Moderate Activity - Walking in and around the house - Males 7, Females 4
3. Yoga from 5 to 15 minutes - Males 4, Females Nil.

D. **Habits**

The subjects of this study typically presents the tendency of the middle class community, None had the habit (addition) of taking alcohol even occasionally. None was a smoker. Only 4 elders were having the habit of tobacco chewing. Normal routine of drinking a cup of tea or coffee in morning and evening is not classified as habit.

Only 6 persons were in the habit of taking cup of tea 4 to 6 times a day.

E. **Physical Examination**

All the subjects were conscious of their health. This awareness is reflected in their good healthy condtion. Though it is difficult to define "What is good health", this term is used to represent the ambulatory condition of subjects. Only 42.22% males had hypertension but it was well controlled and diabetes (Type II) was detected only in 20% of cases. Most of the cases complained of distension of abdomen but this was being self treated by known drugs through advertisements or through casual consultations. Senility was observed in 50% of cases by way of visual impairment and appreciable hearing loss. About 7% cases were asthamatic and 2.2% cases exhibited knee arthritic symptoms. This was exclusively seen in females, 42.4% cases had an enlarged prostate and few (only 3) had G.B. Calculi. Findings are described in Table No. 3.

Table - 3
Health status of Ss (Sample size 45)

	Health Status	**No.**
	General Health report	Satisfactory
	Communicable diseases	None detected
	Non Communicable diseases	
1.	Ischaemic Heart disease	10
2.	Hypertension	5
3.	Diabetes	9
4.	Bronchial asthma	3
5.	Knee Arthritis	1
6.	Enlarged prostate	14
7.	Gross Visual impairment	25
8.	Gross Hearing impairment	10

Mental Health

Leaving aside the senescent factor, these subjects showed mental alacrity with no deficit in any of the psychological functions. Of course since aging is defined as a memory deficity ascending with the age, two tests were performed to test the I.Q. and memory span of the individuals. Following tables show the result.

I. I.Q. by coloured progressive matrices (CPM)

Below Average	Average	Above Average
14	10	21

II. Memory Span

Below 5	5	Above 5
14	19	12

N.B. Memory span Range-Normal 5 to 9 digits, Average 7 ± 2

III. Mental aptitude was examined by searching hobbies if any with the SS. There was no one who showed diversion from the normal pastime habits.i.e. reading newspapers, watching T.V.,performing religious activity. Only two individuals were found to be engaged in writing but that too, in the form of letters to the editors.

Social and Cultural Activities : These were in the form of stereotype behaviour of the SS. Social activities were restricted to visits to the friend's houses, attending cultural programs like musical concerts, dramas (only 20%). About 50% of the SS group regularly attended the senior citizens weekly meetings with the hidden objective of merely occupying the evening time. The pastime behaviour of SS is given below.

Hobbies

Reading	Television	Writing	Religious Activities
36	43	2	6

Familial Absorption : Most of the cases were living with their sons (85%) while 15% were having an independent existence.

Quality of familial absorption is described in subjective evaluation in discussion.

Food Factors : As expected the dietary habits of all the members of present sample were identical denoting the common Cultural heritage. The following table shows the dietary intake per day of SS group in terms of calories,proteins, fats, carbohydrates, calcium, and iron. This is extrapolated by National Institute of Nutrition, Hyderabad and expressed in percentage.

Table 4

Showing Dietary Intake of SS (Above 80 yrs) per day

Category		Calories	Proteins	Fats	CHO	Calcium	Iron
N	M	1780	50	40	311	800 mgm	25 mgm
N	F	1440	40	32	250	1000 mgm	30 mgm
Above	M	25%	28%	30%	25%	-	20%
	F	20%	-	40%	70%	-	-
	M	-	-	-	25%	50%	20%
	F	50%	10%	50%	20%	20%	50%
Below	M	75%	72%	70%	50%	50%	60%
	F	30%	90%	10%	10%	80%	95%

N = Norms of Natioanl Institute of Nutrition, Hyderabad.

M = Males F - Females

The above table gives the unexpected figures of Calories ingested by males and females. Surprisingly males (75%) were consuming below normal calories diet as compared the females (90%). Fat and carbohydrate intake was lower in males than females. Diet of females was grossly deficient in terms of iron and calcium.

Inspite of the deviation from normal standards all the members in SS were keeping medically fit. One member of the group had no routine of dietary intake and one was eating all the nutrition in one single meal at 4 p.m. every day.

All the members were conscious of the regular bowel movements. For this they did not rely on roughage in diet (fruits and chlorophil) but depended on drugs to achieve this goal.

Peculiarly not a single member insisted on the intake of particular food item but believed in a'lacarte from menu.

Financial Status : All the SS volunteers were independent financially and had no worry infulfilling the desires which needed money.

Blood Biochemistry : Biochemistry findings of SS are given in the following tables.

Table 5A
Hemoglobin

Male	**Normal**	**Below 13**
	9	24
Female	**Normal**	**Below 11.5**
	8	4

Table 5B
Blood Biochemistry

	Less than Normal Value	Normal Value	More than Normal
Total Leucocyte count	2	42	1
DLC Neutrophils	1	44	–
Total Cholesterol		34	11
HDL Cholesterol	4	37	4
LDL Cholesterol	–	16	29
Triglyceride	8	31	6
Calcium	5	40	–
Serum proteins	6	39	–
Albumin		45	–
Fasting blood sugar		38	7
Creatinine		44	1
Thyroid stimulating hormone		39	6

Subjective scale : The research workers interpolated the results of each interview with the elders in three categories of QOL namely very good,good, unsatisfactory. There are given in Table No. 6.

Table 6
Subjective assessment of QOL (Size of Sample 45)

QOL	No.
Very good	7
Good	34
Unsatisfactory	4

NB – All the 4 in Category of unsatisfactory QOL were singles.

Discussion

The research project was undertaken to find out the QOL of a middle class Community. The members of this sgement were highly identical int erms of social anthorpology. Further they also posed cultural similarity because of common ethnic origin. Economically also they belonged to the typical middle class society.This homogenecity, automatically excluded the extraneous factors which Crop up due to diverse ethnicity and culture that exists in different racial groups in India. Consequentially estimates of QOL in the SS became an easy task.

It is rightly assume that quest for QOL in aged is a complex phenomenon, because multitude of parameters directly affect the score of QOL. Further QOL is primarily subjective (personal perception) and therefore is highly specific. The selections of SS for our research study, ostracized number of factors and made our study in aged comparatively reliable.

All the elders understood the significance of work being done and supported it whole heartedly showing the cultural richness expected in higher middle class society. This put them in grade 1 (100 marks) in the score of QOL.

In the demographic data, SS again came in the category of grade I due to 100% Literacy in the sample and also because of smooth married life span they enjoyed (exceptions of singles non considered). Longivity also accounts for the QOL. In that sense, the whole group of SS had an extended life span i.e. above 80 years. This gives them the positive score for QOL (Grade 1). In this small number of subjects (N = 45) there were cases of selective survival with distinct history of birth cohorts (48%).

In the physical health survey, the group came under grade II as incidence of non communicable diseases like B.P., diabetes, IHD

(Ischaemic Heart diseases) etc. was quite significant. However all these maladies were duly taken care of by way of constant medical surveillance and personal awareness.

The incidence of gross visual and auditory imparement was small contrary to our expectations.

Mental health of the SS, reflected the same bright picture. Surpisingly some had a memory of high order and in I.Q. tests some were above average I.Q. was expected (30.11%). There was in general alacrity, prompt response to questioning, clear thinking and no confusion. This resulted in Grade I of QOL.

The dietary habits represented the common heritage of the groups. They were aware of the dangers of over eating and eating the spicy and oily foodstuff.. Exceptionally one volunteer had an over stuffing of fats while one elder could lead a perfectly healthy life by eating food once a day i.e. at 4 p.m. This gave the group score of Grade I.

Financially all the elders were comfortably placed and had no problem in satisfying their fiscal needs. The fiscal estimates brought them in Grade II.

Likewise blood chemistry, hormonal assay, ultra sound investigation exhibited overall Grade II of QOL.

The following Table summarises the objective marking of the QOL of SS.

Table 6
Numerical evaluation of QOL of SS

No.	Criteria	Grade	Marking
1.	Behaviour	I	100
2.	Demography	I	100
3.	Physical Health	II	50
4.	Mental Health	I	100
5.	Food factor	I	100
6.	Familiar placement	III	25
7.	Finance	I	100
8.	Bio-Chemistry	II	50
			625/800

Objective evaluation yielded numerically 625 marks out of total 800 marks. This indicates a high quality profile of life of the SS. One

has to note that this is an overall assessment of the group. It also needs to be stated that an array of QOL assessments are available and only some of these are selected for this study. But the conclusion we have drawn appears to be appropriate and reliable.

Subjective scrutiny was rather disappointing. When each subject was interviewed separately by the research worker, it was felt that elders were answering questions with certain reservations with the particular aim of guarding the respectivity of the family. Interviewers felt that "all that glitters is not gold". The interview lacked the frankness and openness. Outwardly every volunteer expressed satisfaction in their life style but none (without exception) willfully gave any information on kinship relationship. Enormous research has been done on the subject of kinship and joint family lwith elders, elders mistreatment and abuse. In our study though members of SS group (except singles) were living with their kins, there was a feeling of co-reisdence rather than that of joint residence. Frankly none of the elders dared in the matters of their sons and in laws (advisory roles, decision making). It appeared that rule of pursed lips and tied tongue (Ed win Ardener) was in vogue. It was also clear that role of robust patriarch system has long back disappeared. However one fact emerged that in no interview, cases of elder abuse or maltreatment was noticed. The subjects of the study were not interested in discussing the intrafamily relationship between them and other family members as regards cordiality, affection and emotional sharing. None of them reacted when such topic cropped up in the personal interviews. It was finally concluded that elders were in fact living in a nuclear family as a satellite. This brought the QOL to the grade III. (It needs to be stated that this is a general scenario. Individually few had a very good profile of QOL).

Conclusion

Objective assessment of QOL can be deceptive (as is seen in our study) as subjective evaluation strikes variance vis a vis objective study. Further QOL is not a perpetually fixed indicator in any one case. It can fluctuate as the circumstances arise. Peculiarly considering the isolated parameters QOL may appear fine in one

parameter but looking at other it may give a gloomy picture of QOL. This pronounces the complexity in assessment of QOL.

It is because of this anomaly no uniform terminology can be deduced for defining QOL. Life is complex and finding out QOL of any single individual is like searching a needle in hay stack because of the infinite spikes on the ball of life.

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Journey Through Life: Reminiscences of older people from Rural Gujarat, India

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ABSTRACT

The present paper is a part of a major case study of five villages in Kheda- Anand district of Gujarat, India. It presents a review of life experiences by older persons aged between 55 to 80 years. Their reminiscing includes major events during their life course, depicting births, marriages, deaths, major trauma, life satisfactions and concept of old age. Feelings about life events and the future are also expressed.

Oral histories were used to collect data wherein women found it quite difficult to recall past experiences as compared to men who were very eloquent.

Analysis showed that the elders had achieved a sense of tranquility and ego integrity. They had come to terms with their lives and, did not face any despair, despite their earlier struggles in life. Thus, the last stage of Erikson's psychosocial theory namely, Ego Integrity versus Despair received affirmation. However, an underlying pathos of widowhood may be linked to pessimism and 'helpless' resignation to worries and concerns as compared to married elders. A surprising discovery was the shifting roles of elders.

Policies need to address especially these unique issues of the elders in the present social context.

Keywords : Rural elders; Life review; Life satisfactions and concerns; Ego integrity; Pessimism of widowhood; Shifting roles.

India ranks fourth in terms of shouldering the growing numbers of elders. Census data shows the proportion of elderly has increased

substantially Soneja (2004), profiles in a country report that there will be 77 million older persons in India today, and will be 177 million in 25 years. The elders are revered in rural society and enjoy a privileged position in the family. However, empirical studies, on psychosocial aspects of aging are rare.

In the Indian culture, the old have been integrated within the family covering the joint, extended and nuclear family structures and the local community according to the prescribed norms. Developmental theories on the elders demonstrate that at this stage of life the elders are given to reminiscing and reviewing about their life events and defining old age. Usually, feelings, satisfactions and constraints felt by them maybe used to gauge their sense of well-being (Mallya, 2003).

By and large, successful aging consists in somehow adjusting to physical and social setbacks.

Though they cannot be as active as they once were, they have an inner struggle of this period that holds potential for growth and even wisdom. Erikson calls this struggle **ego integrity vs. despair.** As older people face death, they engage in life review. They look back on their lives and wonder whether they were worthwhile. In this process, they confront the ultimate despair i.e., the feeling that life was not what it should have been, but now time has run out and there is no chance to try alternate life styles. As the older person faces despair, he or she is trying to find a sense of ego integrity that includes "the acceptance of one's one and only life cycle as something that had to be and that, by necessity, permitted no substitutions (Erikson1963, Crain,1985). Gaur & Kaur (2001), reiterates that life satisfaction is related to successful aging by meeting the developmental challenges presented to individuals in a "satisfying manner." Among the aged this reflects psychological, physical, social and financial adjustments. The present article deals with the review of life events of the respondents gathered by oral histories as a part of a larger, rural case study by Mallya, 2003, sampling older parents whose children have migrated internationally. Life review was one of the study objectives, from which select findings are presented. The respondents gave an account of major

events during their life course that included births, marriages, deaths, major trauma and life satisfactions. Feelings about life events and the future, and, the concept of old age were also expressed.

Sample and data collection

Five villages in Kheda – Anand district of Gujarat, India, namely, Alindra, Dharmaj, Karamsad, Mehlav and Sojitra formed the **population** selected on a criteria of heavy international migration, and, availability of adequate communicating system with the outside world. The **primary sample** was selected for the in-depth case study and consisted of a unit of 10 women and 9 men from the five villages, using the snowballing technique. They were aged between 55^{+} years to 85 years, having at least 1 daughter or a son who had migrated internationally.

On the whole, the women, especially the widows found it quite difficult to recall their past life. Some felt it was too mundane and that there was nothing to recall. Few of the women were reticent as, in Lataben's words "memory diminishes". For most of the women, life really began when they arrived as new brides in the joint family. It needed a lot of cajoling and subsequent visits to get information out of them. Sometimes, a relative would help jog their minds.

The men were hard to pin down as they remained outdoors for one or the other reason when they were sought for the interviews. But, once the interviews started, most of them answered in great detail, all in one sitting.

Results

Emerging data was transcribed from tapes to paper and, cross case analysis and triangulation were used for validating the results and quantifying data by age, sex and marital status when necessary.

The women felt that their past was too uninteresting with no major hiccups. On the whole they unfolded their roles of a traditional housewife, long-suffering daughter-in-law and self-sacrificing parent.

Whereas, the men, especially the widowers reminisced at length, recalling their ups and downs which revolved around their jobs or business, their family and personal tragedies.

The respondents displayed mixed reactions to **feelings** regarding their life course events (see Table 1). The situations included feelings about their present life, children's migration and fulfilling children's responsibilities in life. The feelings ranged between **happiness, neutrality and unhappiness.**

On the question about feelings about the **present situation**, the married women and men appeared to be happy, the widows were either neutral or unhappy; and, only 50 percent of the widowers were happy.

As regards their feelings about **loneliness**, it was not felt by the respondents, except for few married women and the widowers who missed the company of their wives.

Table 1
Feelings About Life Course Events by Marital Status (N=19)

Marital status / **Feelings**	**MW (n = 6)**	**W1 (n = 5)**	**MM (n = 4)**	**W2 (n = 4)**
Satisfied	1	1	2	2
Dissatisfied	-	-	1	1
Neutral	5	4	1	1

Note: MW = Married women; W1 = Widows; MM = Married men; W2 = Widowers.

The **satisfactions and concerns** (worries) of women centered around the children and family members, doing service for whom was considered of prime importance, despite having faced many odds. However, settling their children abroad was highest on their list. The widows were most happy about the son taking over the mantle of their father. All women were emphatically were proud of fulfilling their duties and obligations and were happy with their lot in life.

The **married women** had worries about their children, especially their sons' and husbands' welfare and the uncertainty of tomorrow. On the other hand, the **widows**, who had the least number of satisfactions as compared to the rest, were concerned over the welfare of their sons and the repayment of huge loans they had incurred.

The **married men** felt satisfactions with respect to the women/children of their families as if playing the role of head of the family was of prime importance. The **widowers** had as many concerns as satisfactions. They were happy about what life had to offer them, such as good relations with children and drawing a regular pension.

They were also satisfied about their past achievements of family life, settling their daughter in life and their freedom struggle against the British.

The **concerns** of the **married men** were very nominal about their wives' well being and their children's future. Whereas, the concerns of the **widowers** were about being lonely, falling sick and their property going into wrong hands. Studies of their grandchildren also concerned them a lot.

As far as **future expectations** of helpful persons were concerned, the women expected the family to help. In addition, the married women mentioned neighbors for help during 'family problems'. Married men seemed to depend on themselves, the family (excluding the wife) and the neighbours. The widowers held a rather pessimistic view and mentioned the son and the grandchildren, after naming paid help and god, for future support.

Prakash (2003), who interviewed 40 women and 35 men, urban parents of Non Resident Indian children, found that 2/3rd of the sample felt lonely, especially the women. However, none of her sample said that they were unhappy or dissatisfied with life. This could be because the urban neighbourhoods do not have a strong social support network as in a rural setting.

The **concept of old age** by the respondents, was seen in line with the last two stages of the Ashrama Dharma theory which is

characterized by wisdom and experience to be transferred to the next generation, spiritual preoccupations, and awaiting death.

Married women perceived old age at 50 years which was characterized by health deterioration, inability to eat and work as well as by signs of indigestion and breathlessness. Further, old age was emotionally very challenging as the older women become dependent and helpless, are often harassed by the daughter-in-law, and thus find solace in spiritual matters such as god; or, they trod the path of self-realization. Alternatively old age was seen as a stage of self-respect and dignity.

The ***widows*** saw it as the last stage of development at 60 years, which was troublesome, characterized by deteriorated health and mobility. One just waited for death and the abode of god!

Alternatively, it was seen as a stage of engrossing self in religious activities, as all responsibilities had been completed; thus leading a peaceful and satisfied life.

Married men perceived old age at 70 years and characterized it as a developmental stage which was 'a natural process', 'unavoidable stage' and 'inevitable' and; one had to accept this 'fact gracefully'.They also saw it as a stage where one can 'spend time on oneself' especially as there was less responsibility compared to previous years. It also had more social status at present.

On the downside, they perceived old age when one became dependent on the previous generation for all kinds of support i.e. physical, mental, financial etc. One also could not walk properly and needed rest all the time.The older men perceived it as a stage of deterioration and being bed ridden as "our hands and feet do not work".

Widowers perceived old age after 50 years of age or after retirement, characterized by changes in the body and physical inactivity requiring proper diet and monitoring of health. Alternatively, the older men felt that old age was a mental stage and the body functioned accordingly. One could "conquer pain and connect with one's inner self through meditation and feel fit"

It was also perceived as a time of great opportunity, experience and achievement, and; a stage of guiding the younger generation.

Mehta and Mallya (2000) in a sample of elders from a low income neighbourhood, found that the concept of old age was associated with life milestones such as marriages of children and birth of grand children, along with physical changes due to health deterioration.

On the whole, the elders had come to terms with the situations in their lives, and, despite earlier struggles did not face any despair. Therefore if Erikson is to be quoted they had achieved a sense of **tranquility** and it may be said, **ego integrity** as well; which is obvious in their philosophical wisdom about life and its truths, in their narratives.

The burden of widowhood

In addition to Aging issues presented above, the life histories demonstrated that widowhood had sown the seeds of pessimism and resignation towards life's "worrisome" situations and concerns which are different as compared to those of married people. The situations and concerns differed among the widows and the widowers, but the underlying pathos of widowhood seems to be similar in perceived "cocoons of helplessness" that envelopes them.

In this context, they need (especially the women) services to promote constructive and productive occupation as well as companionship, to lessen their financial worries, social isolation as well as to promote self esteem to meet life's changes and concerns head-on. Families, friends, social organizations and community workers can play a major role in strengthening their support network and help promote better communication with overseas children (read sons).

Finally, a **surprising twist** in the life of the respondents was seen,. These may be described as **shifting roles** of the elders, which were not answered by any theory. There were instances when **women** who had picked up skills such as entertaining friends, car driving and teaching English to their children in the true spirit of a

'modern' woman, during their stay abroad, had relinquished all, to become passive and dependent women, yet slipping into demanding roles of housekeeping and child care taking at 60 years of age, when they come back to their roots. Their husbands and sons took over the driving and the grand children needed special tutors.

As regards the **men**, many married men considered themselves still 'youthful' and plunged into a hectic life of earning as well as co-coordinating village development activities, that could put many a younger man to shame. Another man fancied himself to be quite a catch for women, and, was ready for marriage in his 60's, except that his children frowned upon it.

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The Elderly Victim

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ABSTRACT

Neglecting the elders is one of the maladies, which appeals to be recurrent in almost every society. However, as with other family problems, abuse of elders is difficult to study because of it being sensitive. In the present random sample survey of elder abuse and neglect, interviews were conducted with 317 community-dwelling elderly persons in Sagar district of the Madhya Pradesh, regarding their experience of physical-abuse, material-abuse, psychological-abuse and neglect. Teh existence of this practice is reflected in the response pattern of 39.4 per cent of the elders. Further, elderly from rural areas tend to suffers more severe physical abuse than their counterparts in urban areas. Helpless as they are, dependency is observed to be the prime cause of abuse. Of course, the data suggest that greater the disability suffered by the elderly, greater would be the perception of abuse. Hence there are implications for preventive programs.

Keywords: Elderly abuse, Dependency, Caregivers stress, Maltreatment, Negleact, Family privacy.

Elder 'abuse' is the intentional mistreatment or harm of another person. Abusers can be anyone that an older person comes in contact with, (caregivers, landlords, neighbours, friends) but most typically are the family members of the older persons (e.g. sons, daughters-in-laws, etc.).

According to New York elder abuse coalition (2001) "Elder abuse is defined as the physical, emotional or financial mistreatment and or neglect of a person, 60 years of age or older by another person, such as a family member or care giver, Victims of suspected elder abuse come from diverse ethnic and socio-economic backgrounds. They may have been hurt by the violent act of another

person, by intentional or unintentional neglect, or because of their own frailty and inability to care for themselves.

The phenomenon of elder abuse, though it is age old, attained the attention of academicians, policymakers some decade before. Its presence could be felt even in India where we proclaim reverence for the elderly and believe it as an ingrained characteristics of most of the traditional Indians.

Elder abuse as a social problem remains largely hidden within the domain of family privacy. Older people who are victims of abuse are not likely to discuss it with those outside the family because they are very often dependent on abusers, for their physical and financial need and support. So is the matter with information. Neither family members nor elderly themselves are inclined to discuss such goings on in the family.

It is frequently observed that the abuse can be verbal, psychological, emotional or physical. It may include depriving the elderly of love, care, understanding and concern; or neglecting their basic needs. IN cases of extreme mal-adjustment (e.g. younger generation unwilling to have them around) they may be even abandoned or left at the mercy of other individuals or institutions (Khan, M.Z. *et al.,* 1999).

The review of the literature from the empirical work, revealed that several types of elder abuse like, neglect, deprivation of food, psychological abuse, physical abuse, legal abuse, etc. (Cook F.L. *et al.,* 1978, Crouse J.S. *et al.,* 1981, Douglass R.L. *et al.,* 1980, Finkelhor D. *et al.,* 1988, Narayanswamy S. 2001, O'Malley H. *et al.* 1979, Patel M. 1994, Siva, R. *et al.* 2003, Steinmetz S.K. 1981, Ushashree S. *et al.,* 1999). Most of the victims were found to be over 65, females, role-less within the family, functionally dependent, lonely, fearful living at home with their family members (Rathbone M.E. 1980). Due to fear of victimisation, elderly people isolate themselves, thereby become "A prisoner in their own home" (Brillon Yves 1987). Supporting the carer's stress theory the study of Lau Elizabath *et al.,* (1979) found that perpetrator of elder abuse most often were a relative of the victim like sons and daughter-in-laws. STidy of Walker J.C. (1985) suggest that conflicts between a caregiver's and a carereceiver's age related problems may produce elder abuse. The elder abuse and neglect stopped, in many cases, as

soon as extra burden of responsibility for care giving, was removed from the family members.

Objectives of the Study

1. To examine, maltreatment, coercion, violence and victimization of elders, if any, in the family settings.
2. To compare the elder abuse, if any, between the urban and rural setting.

Methodology

Scope : The study essentially in centred around an assessment of the abuse of the elderly in urban and rural setting. In this regard study was limited to an examination of gendr discrimination, male and female for comparative purposes.

Sample : For the present study 317 subjects (156 urban area - Sagar city and 161 rural area - villages of Bina Tehsil were randomly selected).

Method of Data Collection : The study utilised only the interview method for data collection. The interview schedule was the main instrument used for this purpose. The interview schedule consisted of several items, was divided into various sections. These sections covered issues on demography, health condition, socio-economic condition, victimisation, policies regarding aging. Teh questions were both open and close ended.

The interview schedule was incorporating study variables. This schedule was pre-tested and standardised.

Data Collection : The researcher was well acquainted with language, of the area, in which the study was undertaken. In all, data collection lasted about 6 months. The data was analyzed.

Results and Discussions

Abuse by family members

It is the responsibility of adult offspring to lovingly maintained their aging parens. Aged also depends on family for the care. To know whether everything is cordial or not with respondents, researcher asked them whether they were abused by their family members. Among the findings arrived at : Table 1 suggests that the percentage of abused respondents was more in rurla area (49.7 per cent) than urban area (28.8 percent).

Table 1
Respondents, abused by family members in percentage

Abused by family members	Urban	Rural	Total
Yes	28.8	49.7	39.4
No	66.0	45.3	55.5
N.A./ N.R.	5.1	5.0	5.0

(N.A. : Those who are living alone)

In Table 2, it is interesting to note that the variable of 'Abuse by family has been cross tabulated with other variables. The variable which are signficantly related are given below :

Table 2
Showing statistics obtained by cross tabulation with the distribution of 'Abuse by family members' with other variables.

Variables	χ^2	df	p	c
Family income	111.02116	16	0.0000	0.49202
Health Condition	29.21595	10	0.0011	0.29049
Vision Problem	27.052923	4	0.0000	0.28044
Hearing Problem	14.86284	4	0.0050	0.21163
Relation with family	278.20621	6	0.0000	0.68367

The variable family income is significantly related with abuse from observing the Table 2, researcher found that 52.0 per cent of the respondents in the income group of Rs. 501/- to Rs. 1000/- were abused, followed by 14.4 per cent in the highest income bracket of Rs. 2001/- and above which indicate that abuse may be a consequence of low family income. Vasvani (2001), also mentioned in his study that a large section of victims of elder are found with no income of their own and low family income.

Results also show that there is a direct correlation between the Health condition of the older persons and abuse. Respondents who had bad and very bad health condition (85.6 per cent) were found abused by family members. Siva, R. (2003) found that older individuals suffering from poor health or physical impairment were more at risk of being abused than those of similar age and normal health status.

Further, the variable vision problem is also significnatly related. Those respondents with mild (44 per cent) and acute vision problem (47.2 per cent) are also abused by their family members.

Hearing problem is also signficantly realted. We find that 59.2 per cent of the respondents who had either mild or acute hearing problem were abused by their family members.

Last but not least, the variable relation with family is significantly related. More than 3/4th of the respondents (76 per cent) who have unsatisfactory relation with their family members are found abused.

Abuse by whom

When asked by whom respondents were abused in their family. It is found that more than half (55.18 per cent) of the respondents were abused by their sons. Every founr out of ten (36.79 per cent) respondents had differences with their daughter-in-laws and the rest (8.03 per cent) were spouses, brother, daughter or son-in-law etc. It was also reported in the study of Vijaykumar (1991) that the son and daughter-in-law together were mentioned by the elderly respondents as the most likely abuses.

From the results obtained in our study we find different types of elder abuse (Table 3). These include neglect, physical abuse, psychological abuse, material abuse and viloation of rights. It was stated that psychological abuse was the dominant form of abuse revealed as it was present in nearly 40 per cent of the cases. In the case of physical abuse 30 per cent respondents mentioned that they were affected. Elderly from rural areas suffered physically more then urban areas.

Table 3
Distribution of respondents according to types of abuse, in percentage

Type of Abuse	Urban	Rural	Total
Neglect	17.17	17.49	17.58
Physical Abuse	28.90	30.00	29.56
Psychological abuse	42.22	36.76	36.88
Material Abuse	4.44	8.73	7.17
Violation of Rights	6.66	9.98	8.79
N	**45***	**0***	**125***

(* 111 Urban and *81 Rural respondents were omitted becuase they stated that they were not abused).

Medical Treatment

The responses of the respondents revealed that only 12 per cent respondents were injured, amongst them only 1.60 per cent received medical treatment for their injuries. The remaining 10.40 per cent of the respondents did not go to receive medical treatment.

Telling any one

It is found that only 3.47 per cent of the respondents (7 urban and 4 rural) narrated the agony to others, who were in some cases friends, relatives and the village Head Mukhiya in the rural context. Majority of them advised them to keep quiet.

Reporting to Police

In the study researcher found that only one respondent (Urban) went to the police to report about the abuse. This respondent stated that his case was still pending in the court.

Why people don't approach help ? Or not reporting to the police

Abused people possibly did not seek help because they did not know whom to approach and majority of the respodents did not disclose their abuse to others for several reasons-Police apathy (33.60 per cent), not willing to complain against son (9.60 per cent) since it was a family matter did not want to disclose (23.20 per cent), they were embarrassed (0.80 per cent), they were hopeful that the abuse will soon stop (1.60 per cent), they feared being thrown out on the street (14.00 per cent), they were afraid if they speak up things will get even worse (12.30 per cent).

Conclusion

Elder abuse is one of the last and general types of family maltreatment to come to public attention. As with other family problems, it is difficult to study because of its sensitivity and invisibility. Clear ideas about the prevalence and nature of elder abuse have been hard to obtain. Misconceptions have flourished in the absence of solid evidence, yet being natural.

As Devi Prasad (2000) reminds us “there is little information either by way of empirical data or official statistics on the phenomenon of elder abuse in the Indian context.

It goes without saying that family is the primary caregiver for the elderly and the majority of the aged population is dependent on their family is not unnatural. The results of the study indicate that the higher percentage of the victims were from rural areas. Statistics shows that, respondents were functionally dependent becuase of inadequate resources or physical limitations. The study indicates that the psychological-abuse was the most prevalent form of elder abuse. Material-abuse and violation of rights were also noted but were less common than the other categories of abuses. The conclusion would be that greater the disability, greater would be perception of the abuse by the elderly. Dependency plays a critical role in elder abuse. But one question remains unanswered that "Does elderliness compels one to make excessive demands on caregivers ?"

Prevention Programmes

In India, The National Policy on Older Persons" was initiated in 1999. This policy aims to strengthen the legitimate place of older people in society and to help older people to live the last phase of their lives with purpose, dignity and in peace. "The State will support older persons, provide protection against abuse and exploitation, seek their participation and provide care services to improve the quality of their lives" (Wenger G.C. *et al.,* 2003).

The UN international plan of action adopted by India among other countries in Madrid, April 2002, clearly recognises the importance of elder abuse and puts it in the frame work of Universal Human Rights (Edited : 2003). However, it is everybody's duty to prevent elder abuse in an aging world.

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Attitudes and Problems of Female Senior Citizens

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ABSTRACT

The present paper presents the attitudes towards ageing and problems of 100 female senior citizens belonging to slum area and urban area. It was found that majority of the sample studied showed negative attitudes towards ageing. These subjects also reported their problems related to hearing, general health and psychological problem.

Keywords: Negative attitude, Positive attitude, Ageing, Psychological problems, Physical problems.

For any one to live peacefully, satisfactorily and also to lead better life first of all one should have positive attitude of self. Besides this, family members attitudes are also equally important for the same. It is very true incase to elderly people. However, in general the elderly people hold negative attitdues towards old age. These attitudes appear to have influence on the perception of their problems. Taking overall view the evidence is given by Reddy and Ramurti (1988) that there is good correlation between negative attitude towards old age and their maladjustment. Old age, in general, is associated with multidimensional problems inlcuding health and sensory, social and psychological aspects. Adjustment to these problems in this period is difficult and also may be accompained by varying degrees of natural tensions because of limited capacity, diminishing energy and declining mental abilities on the part of elderly persons. In contemporary world the percentage of elder,ly population is increasing due to availability of better health facilities. As per world population data in 1998 ten per cent of the world population is in the age of above 60 years. Whereas in India, according to Sundram (1999) the female senior citizens make up the majority of the elderly population i.e. 319 million than elderly men i.e. 259 million. In the light of above findigns an attempt was made to take up the study of attitudes and problems of female senior citizens.

Methodology

A sample of 100 female senior citizens in the age group of 60-85 years was selected at random from Parbhani town and were personally interviewed using an interview schedule. Out of 100 subjects female senior citizens belonged to slum area and the remaining 50 belonged to urban area. The collected information was pooled, analysed and discussed.

Results and Discussion

Table 1

Female senior citizens attitudes towards their aging and reasons for that

Attitudes	Percentage of female senior citizens		
	Slum (50)	Urban (50)	't' values
Positive attitudes	19 (38.00)	25 (50.00)	1.22^{NS}
Reasons :			
Being cared well by family members	63.00	76.00	1.42^{NS}
Free from family responsibilities	57.89	32.00	2.52*
Having ample leisure to spend on self oriented activities	36.84	8.00	4.37**
Being healthy	10.52	8.00	0.22
Negative attitudes	31 (62.00)	25 (50.00)	1.22^{NS}
Reasons :			
Being a burden to family members	38.70	28.00	0.80^{NS}
Beign unable to contribute or share in family matters	38.70	16.00	1.94^{NS}
Being neglected rejected by family members	35.48	36.00	0.07^{NS}
Being unwell due to aging	35.48	76.00	3.41**
Having unreserved conflicts with daughters-in-law	32.25	24.00	0.67^{NS}

** Significant at 1% level; * Significant at 5% level
NS Non Significant

Table 1 reveals female senior citizens attitudes towards their aging and reasons of them. Firty per cent to sixty two per cent of the female senior citizens from urban and slum areas developed negative attitudes towards aging. The reasons given by slum and urban female senior citizens for it respectively were : being burden on their families (38% and 28%), followed by being unable to contribute or share in family matters (38% and 16%) being unwell due to aging (35% and 75%) and having unresolved interpersonal conflicts with their daughter-in-law (32% and 24%). While the remaining 38 per cent and 50 per cent female senior citizens in slum and urban areas respectively showed positive attitudes towards aging. The respons stated by them for it respectively were : being cared well by their families (63% and 76%), free from family responsibilities (57% and 32%), having ample leisure to spend on self oriented activities (36% and 8%) and being healthy (10% and 8%). The findings are in line with the results stated by Reddy and Ramamurthy (1988). Overall no significant differences were noted in the reasons given by slum and urban female senior citizens for developing either positive or negative attitudes towards aging.

Table 2

Problems encountered by female senior citizens due to aging

Attitudes	Percentage of female senior citizens		
	Slum (50)	Urban (50)	't' values
Health			
General malaise	80.00	58.00	2.47*
Cough and cold	76.00	58.00	1.97*
Fever	72.00	62.00	1.07Ns
Dental and oral ailments	54.00	18.00	4.09**
Digestive disturbances	52.00	32.00	2.10*
Asthma	14.00	26.00	1.56^{NS}
BP	2.00	20.00	3.05**
Diabetes	6.0	10.00	0.75^{NS}
Psychological			
Sleep disorder	46.00	52.00	0.61^{NS}
Unconditional anxiety	34.00	40.00	0.63^{NS}
Feeling of insecurity	34.00	40.00	0.63^{NS}
Fear of death	34.00	40.00	0.63^{NS}
Feeling loss of intellectual capacities	48.00	20.00	3.11^{NS}

** Significant at 1% level * Significant at 5% level
NS Non Significant

Problems encountered by female senior citizens due to aging are shown in Table 2. The common health problems of the slum female senior citizens were general malaise (80%) followed by cough and cold (75%) fever (72%), dental and oral problems (54%) and digestive disturbances (52%). The corresponding percentages of urban female senior citizens were 58, 58, 62, 32 and 18. A less per cent of female senior citizens in both the areas suffered from asthma (14% and 26%) followed by blood pressure (2% and 20%) and diabetes (6% and 10%). The sensory problems encountered by the female senior citizens in slum adn urban areas respectively were visual (74% and 62%) audition (42% and 28%) and skin (40% and 18%). Thirty four to 40 per cent of the female senior citizens in slum adn urban areas developed psychological problems like unconditional anxiety, feeling of insecurity and fear of death, while 46 and 52 per cent of them in both the areas reported sleep disorder. Fourty eight per cent and 20 per cent female senior citizens in slum and urban areas respectively reported to feel loss of intellectual capacities due to aging. Similar results were found from studies carried out by Nalina and Anita (1995) about Socio emotional problems, Nandini *et al.* (1997) about deterioration in intellectual aspects, Siva Raju (1997) about decline in health, Goyal (1999) about deterioration in sensory organs of senior citizens. Significantly a higher percentages of the slum female senior citizens encountered some of the listed out problems as compared to their urban counterparts.

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The Situation of the Elderly Women in Rural Bangladesh : A Struggle for Survival in the Later Life

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ABSTRACT

Like other developing countries elderly in Bangladesh are facing multiple challenges and problems but among them rural elderly, particularly the rural elderly women,are most vulnerable in terms of educational attainment, employment, religion, patriarchy, social norms, and family support. Both men and women are affected by old age, but due to a lifetime deprivation, old age is likely to mean ill health, social isolation and poverty for aged women. They also possess fewer assets and have less control over family income, endure more chronic disease and disability than their male counterpart. Their constraints, freedom of movement and public exposure, lead to feelings of neglect, isolation and loneliness. This results in greater vulnerability of older women who lack social networks outside the home. Older men have a more developed social network of support than women as they have the freedom to meet with friends over tea, etc., while women do not. Women are thus isolated both socially and economically, further increasing their dependency and vulnerability. The aim of this paper is to focus on rural elderly women and their livelihood situation in a country where poverty is widespread, patriarchy and social norms are always pose a great threat for women survival, developmental programs are exclusively bypass and ignore the demand of this invisible, unfortunate,marginalised and excluded groups. It is the view of the author that although the structure of Bangladeshi society is rapidly changing because of various factors still elderly women in rural Bangladesh prefer to live with family member and they are also cared for and supported by the family. At the same time

it should be noted that they constitute a vulnerable group within families. The paper emphasize that elderly specially the rural female headed, widowed and disabled elderly cosntitute a distinct group of the rural poor deserving special attention of planners and policy makers.

Keywords: Rural elderly women, Family support, Widowed, Disabled, Developmental programme.

One of the outcomes of the demographic transition from high rates of fertility and mortality to a decline in mortality rates, followed by declining rates of fertility, is an increase in the elderly as a proportion of the total population. As the proportion of aged people is gradually increasing the number of the elderly women are also increasing everywhere of the world. Accoding to United Nations Projections, if present trends prevail, the sex ratio (that is, the number of men per 100 women) will continue to be imbalanced in the developed regions. For instance, this rate, which in 1975 was 74 for the 60-69 age group will be 78 in 2025, with a rise from 48 to 53 for the over 80 age group. In developing regions, this rate will be 94 in 2025 against 96 for the 60-69 age group, and 73 against 78 for the over 80 age group, signifying a slight decline. Thus, women in most cases, will increasingly, constitute a majority of the older-production (Ali, 2000), (Table-1).

Table 1
Population Projection of Bangladesh (1975-2025)

Year	Total Population			Elderly Population 60 +			%		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
1995	60745	57576	118321	3068	3150	6218	5.05	4.47	5.26
2000	65608	62301	127909	3544	3703	7247	5.40	5.94	5.67
2010	75551	72012	147563	4901	5232	10133	6.49	6.81	6.87
2020	85576	81179	166755	6998	7452	14450	8.18	9.18	8.68
2025	90406	83337	177776	8562	9059	17621	9.47	10.37	10.09

Source : Population Projection of Bangladesh (1975-2025) by G. Rabbani and S. Hossain, Bangladesh Bureau of Statistics, 1981, pp. 38-45.

Although, Bangladesh is experiencing the process of rapid unrbanization but still it remain rural as 80 percent of the population living in the rural regions. The situation of the elderly in Bagnladesh whether they live in urban or rural areas are pitiable. But rural elderly face more problems than urban elderly as the level of poverty

in rural areas is more widespread. As Davis (2001) suggests, over all years, the incidence of rural poverty has been greater than that of urban poverty has been greater than that of urban poverty. Poverty is much a rural phenomenon with 93 percent of rapid transformation and polarisation of the Bangladeshi society there is little doubt that poverty poses a threat to the integrity of the family in rural Bangladesh, eroding patriarchal and generational authority and weakening bonds of obligation between family members. While it is far from clear that economic conditions in Bangladesh have, in the aggregate, worsened during recent years, it is certain that the pool of landlessness and impoverished in rural areas has increased in numbers, and probably in proportion, and that within this group the proportion of those who are desperately poor has also grown. For this segment of the population, relative to the more stable and prosperous majority, life can truly be brutish and short, and the quality of life for those who survive to old age is likely to be very poor (Cain, 1991).

At present there is serious lack of social welfare structure in Bangladesh to support the elderly. Despite the universality of the aging process, very little has been done to make the life easier for the older generation who are the progenitors of civilization, the transmitter of culture, and the people who ensure society's lineal succession (Morada, Morada and Guzman, 1986 : 116). The joint or extended family system, which used to take care of the elderly population by family resources, is now eroding. In such a context, the need for a social welfare program for the elderly, both from the government as well as from private sector is emerging and requires serious attention in future years (Govt. of Bangladesh, 1994 : 170). So it is necessary to identify the characteristics and needs of the elderly so that the concerns of the elderly could be made integral parts of social development program and strategies.

The state of Wopmen in Bangladesh

In Bangladesh women are deprived in many areas including education, health, nutrition, employment, marriage and divorce, access to credit as well as control over assets. According to Bangladesh Human Development report 1998, the gender gap has widened from 25% in 1994 to about 28% in 1995 (UNDP, 1998). According to Bangladesh HDR 1998 the most significant contribution to the existing gender gap is the difference in

educational attainment. The 1995 Labor Survey Report states that about 46.5% of women had no schooling while only about 0.7% had higher education (degree and above) reflecting a very poor picture of human development. The enrollment ratio for girls was much lower than boys and the girls' drop out rate was consistently higher. As a result, the adult literacy rate for women is now roughly half that for men.

There are also gender gaps in health care and Bangladesh is found to be one of the few countries where women lead shorter lives than men. One of the most important questions relating to the manifestation of gender disparity regarding the use of health care services is the expenditure on treatment. Available data show that average treatment is 38% less than that of men. However, a study by Rahman (1997 : 76) shows that greatest deprivation is faced by women in the lower income category where the expenditure on treatment of the male members is three times the expenditure of the female members. This is particularly ture to elderly women, who are much more dependent on their sons and who may not want to burden the family with medical expenses.

Culture, Tradition, Religion and Patriarchy : Elderly Women in Rural Bangladesh Faces Multiple Jeopardy

The story of aging in Bangladesh may be different, depending on whether one is women or a man (Ellickson 1988). Men have the advantage over women in this patrilineal, patrilocal and patriarchal society throughout their lives. Struggling in patriarchal, poverty stricken society, the status of rural elderly women is reflected in their almost non-existent role in the formal economy, low literacy, poor nutritional status and high rate of morbidity, mortality and fertility. Rural Bangladeshi women are regarded as poorest of the poor because they are economically poor, socially prejudiced by customs and beliefs and traditionally secluded in Purdah due to patriarchal dominance of the society. In Bangladesh, gender and rural poverty are inter-linked in different ways. Gender appears to be a principal criterion for the allocation of scarce resources in communities and households. In terms of access to social services, i.e., health and education and in terms of participation in the labour force. Women are more disadvantaged than men which plays a vital role with regard to poverty creation and its perpetuation. Because of prevailing socio-cultural reasons, rural Bangladesh is also characterized by

marked sexual stratification. The overall low level of economic development, strong cultural norms defining the role of women, sex segregation and the structures of purdah (the traditional seclusion of women) have all combined to exclude women from all the important sources of wage employment and income generation activities, including the cultivation of their own land (Cain, 1979, Mahmud, 1996). Gender inequality and discrimination against women is widespread in Bangladesh. In contrast to normal demographic patterns, in Bangladesh women's natural tendency to live longer than men has been eliminated. This sex ratio pattern of Bangladesh. In contrast to normal demographic patterns, in Bangladesh women's natural tendency to live longer than men has been eliminated. This sex ratio pattern of Bangladesh is different from other countries where male mortality exceeds female mortality at the later age. Consequently predominance of female over male elderly are found in those countries and the case is rivers in the case of Bangladesh. This is a result of a lifetime of deprivation, lack of education, poor health and nutrition, low status, discrimination, and restrictions on mobility and association. Only 5% of women over the age of 60 are literate compared to 30% of men (US Department Census 1996). It is evident from the census of 1991 that the literacy rate of the country is 32.4 while the literacy rate of the elderly is 22.1 which is about 10 per cent lower than the country average (Table 2). Thus, the significant o bservation in table 2 is that female elderly literacy rate is very low with extremely low in rural areas, only 6.2 per cent, in against of 16.4 per cent of urban female elderly.

Table 2
Percentage Distribution of Elderly Population by Literacy Rate, Sex and Type of Area

Age	National			Urban			Rural		
Group	T	M	F	T	M	F	T	M	F
5 & above	32.4	38.9	25.5	27.9	34.0	21.5	48.5	55.0	40.8
60 & above	22.1	33.2	7.7	19.9	30.6	6.2	33.7	46.6	16.4
60 - 64	21.8	33.0	8.6	19.3	30.0	6.9	34.0	46.62	17.6
65-69	24.9	36.5	8.9	22.3	33.6	6.9	38.6	51.6	19.8
70 +	21.1	31.9	6.3	19.3	29.8	5.0	30.9	44.1	13.4

M : Male; F : Female; T : Total

Source : Bangladesh Population Census 1991, pp. 320-31. 324-325.

Older women also own fewer assets and have control over family resources, and endure more chronic disease and disability than their male counterparts. Older women face both age and gender

barriers in finding income generating opportunities. They are limited by social and cultural contraints in their activities and lack opportunities for employment/ income generating activities. As Heslop points out, “public and private service delivery structures commonly mitigate against the potential of older people to participate as active and valued members of their societies. Older people face barriers accesing the most basic health and sanitation facilities, and are frequently denied access to bank loans and credit schemes as well as appropriate education and information” (Heslop, 1999).

The majority of older women in Bangladesh are widowed (68%) compared to 7% of men. Remarriage among men after widowhood and divore is fairly common, while remarriage among women is uncommon (Kabir *et al*., 1998). The pattern of high proportions of married men and widowed women is similar to that found in high income nations.

Do Much Get Less : The Story of Rural Elderly Women

In Bangladesh, women are discriminated both by prejudice and by means of exploitation. The average wage rate is less than half as that for men. This is usually true in case of low paid jobs. In the rural areas, for example men’s wages may be 14 to 40% higher than women’s (UNDP 1998 : 41). Hamid (1994) study revealed that women always receive lower wage compared to men. Female/ male wage ratio is 0.50 in the formal sector 0.60 in the non - agricultural sector, and 0.66 in the agricultural sector. Apart from having their work underpaid, women's work performed within the household are also undervalued because this kind of labor remains socially invisible and has little exchange value or impact on women's decision making power (Mizan, 1994 : 37). Even though rural women in Bangladesh perform both income generating and income conserving production, these works do not have any monetary value since they are viewed as part of household activities. It is important to mention here that quite apart from their contributions in terms of earnings, is the sheer time contribution of poor rural women to a complex range of unpaid tasks. These tasks include fetching, gathering foraging, cooking, processing, conserving, ministering, and the building up of kin networks and inter-household relationship in the village which often prove critical for family survival during periods of food shortages associated with sessional troughs and even drought (Agarwal, 1998).

Although women perform tasks that can be done at home, such as seed preservation, grain storage, post harvest processing of paddy and wheat, poultry raising, livestock care, kitchen gardening, cooking, cleaning and child rearing; none of their work is considered productive and they remain economically dependent on their male kin (Abdullah and Zeiderstein, 1980; Cain 1979; Khuda 1980; Farouk and Ali 1975; Hamid, 1989, 1994). As noted by Papanek (1973) Bangladeshi women do have a share in the tasks that help agricultural production, but their role in the earning of the family income is never recognized. He also mentioned that, farming is a 'two person' occupation where the wife's role is non-paid and non-recognized. While not all of these activities can be quantified, time allocation studies from across the country yet show that women of this class put in long hours of work, often longr than by men, especially but not olnly when domestic work is counted (Sen 1988; Dasgupta and Maiti, 1986). In performing household work, gender disparity is also evident as it has been found that, on the average, rural women spend six hours per day performing such household work in contrast to men who spend only fifty minutes on household maintenance activities (Barkat-e-Khuda, 1980; cited in Mizan, 1994:38). Pattern of gender specific time-use reveal that in rural areas ever-married women spend 15 percent in paid employment, while for ever-married men these figures are 4 percent respectively (Amin, 1994) (Table 3 & 4).

Table 3

Time Allocation to Non-market Work in Rural Bangladesh

House Hold Poverty Level/ Age grpup	Subsistence		Hours per day per capita House Work								Tota non-Market	
	M	F	M	F	M	F	M	F	M	F	M	F
Extreme	0.48	0.79	0.12	0.19	0.00	0.24	0.02	2.78	0.09	1.45	0.70	5.45
Moderate	0.26	0.68	0.14	0.19	0.00	0.23	0.03	2.88	0.13	1.41	0.56	5.40
Non-poor	0.22	0.68	0.12	0.18	0.00	0.24	0.03	2.98	0.13	1.60	0.50	5.70
5-9 Years	0.32	0.45	0.04	0.09	0.00	0.04	0.04	0.44	0.11	0.50	0.50	1.52
10-64 Years	0.31	0.79	0.15	0.22	0.00	0.30	0.02	3.53	0.12	1.76	0.60	6.59
65 +	0.14	0.36	0.04	0.03	0.00	0.04	0.09	1.43	0.24	0.97	0.52	2.84
Average	0.31	0.42	0.13	0.19	0.00	0.24	0.02	12.91	0.12	1.51	0.58	5.57

Source : Harmid. S., 1994

Table 4

Daily Hours of Work in Income-earning and Home production in Rural Areas by Gender

Year		Women	Men	Women	Men	Women	Men
1977	Mymensing	1.16	7.40	6.68	1.29	8.29	8.33
1980	Comilla	3.90	5.90	5.60	0.90	9.50	6.80
1991	Rajshahi	1.53	6.75	6.25	0.64	7.78	7.39

Source : Cain 1978, Khuda 1980 and Amin 1994.

Tinker et.al., (Overseas Development Council, 1976) also supports this view by arguing that there is worldwide failure to evaluate the contribution of women to productive activity and there are considerable differences in which the work is divided between men and women. In subsistence societies as they argue, women tend to do at least 50 percent of the work related to food production and processing and compare to men women rise early and retire later. The World Action Plan announced at the middle of the United Nations Women's Decade (1976-1986) says, 'women share a half of the world population, One-third of the official workforce, and two-thirds of the total working hours. Nonetheless, they receive only 10 percent of the total income, and own as little as 1 percent of world wealth'. Hartmann and Boyce compare the work habits of a middle-peasant, Aktar Ali and his wife, Anis's ma (mother :

In the afternoon, Aktar Ali often finds time to sit in the shade of a jackfruit tree, recounting tales of his past, but even when she is sick, Anisa's ma cannot rest. One day, when her face was flushed with fever, she told us, "my work is never done. All day I've husked rice, and now I have to collect fire-wood and cook. I haven't even had time to bathe. I'll work until I die-just work, work, work." (Hartmann 1983:87).

Martin (1988) study revealed that a high proportion of the elderly with income are found to be in the lower income bracket in the rural area compared with the urban area. Women in both areas reported lower income than men, with high proportions of women reporting no income at all. This is due to the fact that women almost exclusively were involved in unpaid household work.

Widowed, Divorced, Disabled and Female headed Elderly : The Situation are Complex

Of the approximate 55 million Bangladeshis currently below the poverty line, defined as 2,122 calories/person, the 'poorest of the poor' and the most vulnerable are women, particularly divorced, separated, abandoned and widowed women who are simultaneously

and commonly heads of sizable households (World food Program, 1990). Findings from various studies show that over 15 percent of the rural households in Bangladesh are headed by women (Table 5).

Table 5
Distribution of Households by Age of the Head

Age Group	Village-A Gender of Head		Village-B Gender of Head		Village-C Gender of Head		All Villages Gender of Head	
	M=390	F=76	M=289	F=54	M=201	F=28	M=880	F=158
< 20	0.5	2.6	0.7	-	-	-	0.5	1.3
20-29	12.6	10.5	5.9	14.8	8.5	42.9	9.4	17.7
30-39	27.4	38.2	22.5	51.9	2.5	21.4	26.3	40.0
40-49	27.7	31.6	31.1	20.4	19.9	17.9	27.0	25.3
50-59	11.8	7.9	18.7	7.4	17.9	14.3	15.5	8.9
60 years & above	20.0	9.2	21.1	5.6	24.4	3.6	21.4	7.0

Source : Mannan, M. (2000)

These are households where the head is widowed, divorces, abandoned or single. (Mannan M.A. 2000) Female-headed households tend to be much poorer than average : over 95 percent are below the poverty line and one-third are classified as hard-core poor (Khatun 2001:163).

The majority of older women in Bangladesh are widowed (68 percent) compared to 7 percent of men (US Department of Census, 1996). The issue of widowhood is significant because of women's marital status is of primary significance to her survival and well-being. Once a woman is widowed (or divorced), she is often denied access to resources as a husband's resources may be distributed among other family members or to an assigned male relative. As a result, widows have no security, are heavily dependent on sons/family, and have comparatively worse socio-economic situations as they lack opportunities to earn income and do not hold savings. Gender discrimination and inequality are carried into old age, making widows among the most vulnerable in society (Help Age International, 2000). Numerous micro-level studies show, that Indian widows are often heavily discriminated against in economic terms within household (Alter chen, 1998). Widows face particularly acute discrimination (Randel et al. 1999). Widowhood is regarded as a 'social death' in India, with restrictions on dress, diet, public behavior, residence, remarriage and employment opportunities (Chen and Dreze, 1992). In addition, Rahman (1993) points out that there is

evidence that widowhood, for women in particular, is associated with substantial deterioration in socio-economic status in Bangladesh.

These households face deteriorating situation with 21 percent of them having less land now than 10 years ago. There are many widows, divorced and abandoned women who do not get the support of the extended family. Most of these households are single member or nuclear type, consisting of only one member (i.e., the woman herself) or the women with her minor children (BIDS, 1992). It appears that in the last few decades, the number of such households has increased.

Physical disabilityis one of the pervasive problem among the elderly in Bangladesh. According to (WHO, SEARO, 1995) a high incidence of blindness among those over 65 (41.6 percent) of whom 42.7 percent are female, compared to 39.2 percent for males. Prolonged illness and old age was found more among women (32.9 percent) than men (26.8 percent). The condition of the disabled women is more vulnerable in Bangladesh. The old and the disabled without the earning capacity and a steady source of income or support from family members constitute a distinct group of the rural poor. Because of age and physical handicap they become dependent on charity or fall back on begging (Hye, 1996). The disabled women are mostly treated economically unproductive. They are not directly involved in economic activities but they perform all the household activities. Though they do all type of works, they are not recognized as an active family members in the matter of sharing joys and sorrows (Islam, 2002).

Caring and Sharing : The Trend of intergenerational Support and Cooperation within the Household

Family relationships can be conceptualized as a series of cross-cutting implicit contracts, viz, shared understandings about the roles and responsibilities, claims and obligations which different categories of family members have towards each other (kabeer, 2000). Inter-generational contracts refer to the mutual claims and obligations which govern relationships between different generations within the family, conventionally conceptualized in terms of generations. The concept of intergenerational reciprocity and related explanations are often framed in terms of long-term reciprocity, in that parents provide support to their children when young and

children in turn provide support to their elderly parents (Jones, 1992). Such contracts are implicit in that they are shaped by the wider norms and values of a society rather than arrived at through individual negotiations, although clearly different family members will interpret the terms of these contracts with some degree of individual discretion.

Living arrangement is an important component of the overall well-being of the elderly. By analysing the quality of living arrangement one can get a critical perspective regarding elderly's situation within the household. Which also indicate the form of intergenerational support, respect, responsibility cohesivences within the generation. In Bangladesh, it has traditionally been the responsibility of the family to provide food and shelter for its elderly members. More specifically, traditional norms in Bangladesh, as in other South Asian countries (Jefferys, 1996) demand that sons are responsible for financial provision, while the daughters-in-law are responsible for providing day to day care. This tradition may be related to a situation where extended families reside together and/or to inheritance structures favoring sons. The traditional system of inter-generational co-residence is said to be widespread in Bangladesh. Martin's (1990) research in a number of countries of South Asian, including Bangladesh, gives evidence that the majority of elderly people continue to live within extended family settings both in rural and urban areas, though there may be variations by sex, area of residence and the socio-economic situation of the elderly. In Bangladesh, there is a widespread expectation that the elderly will be taken care of by their children. It is the children's responsibility to take care of their parents when the parents get old. For example, Cain (1986:378) reported that in a 1976-78 study of 343 households in a Bangladeshi village, 64 percent of the 94 persons ages 60 and over were living with a married son and 16 percent were living with an unmarried son age 15 or over. Only two percent of the elderly were living with a married daughter. Cain's (1991) research also points out that social changes have not eroded the significance of the joint family. Kabir et al., (1998) in their study mention that a large number of elderly people reported living with their offspring (rural : 70; urban:86%). Another 23% of the elderly people in the rural area report sharing the same residential compound with their children.

Sajeda Amin's recent (1996) study regarding household structure and family living arrangements for the elderly women in rural Bangladesh finds that the elderly and women rely extensively on family support. Although landlessness brings stress on intergenerational relations a favorably low dependency ratio (elders to son), brought about by the unprecedented survival of large numbers of sons that is the result of the child mortality decline of the 1950s and 1960s, has allowed the burden to be spread over a larger numbers of sons than were previously available. A persistence of traditional living arrangements, in which sons from their own households in the homesteads of their fathers, also contributed to retarding the process of family disintegration that is likely to be caused when farm size decreases and the role of the farm economy in a traditional peasant society diminishes.

It is mentioned above that household relations are not always one-way and may be best understood within a framework of intergenerational exchange. Data from various researches revealed that older women provide valuable contributions to well being and livelihood of the family by taking responsibility for household activities, freeing younger family members to seek work outside the home. Research by Help Age international in Ghana, South Africa and Bangladesh shows how important women's support can be – though its value often goes unrecognized even by the women themselves. Child care and domestic work, supported traditionally provided by women are significant factors in enabling families to survive (Scobie, 2000). Data from South Africa, Rwanda, Combodia and Bolivia demonstrate that older women are often the bedrock of support and reconstruction when natural or military disasters strike. A 70-year-old Joyce Mukandkundiye of Rwanda remarks “older people are important advisors in the community; they help to settle misunderstandings and build peace. In this way we are helping the government to rebuild Rwanda.” At the same time, these services provide security for the house and free up other family members for outside work. In other depictions of Bangladeshi family life, Islam (1974:78), Aziz (1979:110-111) and Nath (1981:27) all describe a joking relationship between grandparents and grandchildren. In another context, however, Aziz (1979:50) says grandmothers take the responsibility of providing children's sex education and preparing

them for later marriage responsibilities. This relation is always warm, caring sometime educative in nature.

Social, economic and demographic changes have led to some changes in family structures, such as an increase in nuclear families. Nonetheless extended families with older people co-resident are still the norm. It has been generally assumed that the persistence of the extended family and multi-generational living arrangements denotes that the elders in the developing world are well cared for by their family members. Co-residence, however, does not mean that resources are being distributed evenly or that older people are being cared for. Study by Kabir and Salam, (2001) also suggest that families remain a primary source of support, but it is getting weaker due to break down of traditional family structure, joint to nuclear family and increasing poverty. While older people say that family support systems remain “strong”, they also indicate that they are losing respect and not being cared for. This demonstrates that while on the surface family support (e.g. co-residence) continues, caring (resource and respect) is declining. Goldstein, Schuler, and Ross (1983:718) provide a powerful example of poor relations in a quotation from one of their elderly respondents in Kathmandu : “though we live in the same house, I have not seen my son for many days... At my son's house I am nothing. His pet dog is cared for better than me.” Vatuk (1980:143), comments on family relations of the elderly in 1974-76 in the village of rayapur (now a part of New Delhi) : "In fact, physical neglect of the old in this relatively affluent stratum is rare, but subjective feelings of neglect among the old, and actual neglect of their affective and social needs when they become physically feeble or incapacitated is not uncommon." Finally, D'Souza (1982:83) cites a study in Meerut (India) that indicated that more than half the respondents felt "neglected or indifferently treated," even though they were living with family members. Study by Martin (1990) also echoed the same thing.

The term family care has a beautiful and noble connotation, but, in many cases, it is accompanied by the painful sacrifice of the caretakers, and the quality of care is frequently poor... it cannot be taken for granted any more, even if it could in the past, and where it is forthcoming, it is often insufficient both in the degree and quality necessary for the welfare of the elderly (1990:338).

In Bangladeshi context because of traditional norms religious and social values most of the elderly people are living with their offspring but at the same time it should be elicited that how easier this co-residency. Because of widespread poverty and socio-economic changes, living together is no guarantee of economic well-being of the elderly. Soodan (1982:150) mention that the overall status of today's elderly, at least, is more directly related to their economic status than to their age or place of residence. And he concludes that thus, status of elderly South Asians appears not to be guaranteed by virtue of their age or coresidence with offspring. Rather, status more likely is a function of sex, health and economic resources. Examples of strained relations, misunderstanding and dissatisfactions associated with coresidence is found. As quoted in Pathak :

Your family is attached to you so long as you earn. With frail body and no income, no one in the house even will care for you...What the extended family brings is not the sharing of socio-economic secutity but insecurity (1982:37).

It can be noted that though the elderly women are cared and revered by the younger generation but not always this situation prevail or exists, especially for elderly women this position is closely associated with her husband's authority. As a result husbands death can be a critical transition for the woman in terms of her role in the household, because her primary source of power is gone. Depending on the dynamics of the relationship between the widow, her son, and her daughter-in-law, the widow's position of authority may continue unchanged, or it may be lost in whole or in part to the daughter-in-law. If there is conflict between mother and daughter-in-law, it will be resolved in favor of the one who has most influence on the son. The potential conflict is always present, but it is not inevitable. This potential increases, as the daughter-in-law ages, as does the probability that the conflict will be resolved in her favour (Cain M, 1991). Emerging evidence of shifts in mother-in-law and daughter-in-law relations in South Asia can also be seen to be indicative of the changing content and context of familial relationships. Vera-Sanso's (1999) study of low income urban settlements in Chennai (India) uncovers an inversion of the typical dominant mother-in-law and submissive daughter-in-law order found with landed rural families. Mother-in-laws have become wary of antagonizing daughter-in-laws out of the insecurity and fear of being left alone in old age. In order to maintain more encompassing households, they undertake various strategies one of which may be to

make the life of daughter-in-laws less onerous than they traditionally have been. In a study of two villages in Bangladesh in the late - 1960s and mid 1970s, Ellickson (1988:59) reports that although she never saw mistreatment of elderly widows in their sons' homes, she did note a definite change in interactions upon the death of the elderly husband. The older woman changed from an “officious, vocal, wifely head of the domestic realm“into” an old widow, much quieter in voice and demeanor. After her husband’s death, a woman's comfort and well being are at the sufferance of her daughter-in-law, the daughter-in-law over whom she previously exercised authority” While the elderly are not always revered in rural Bangladesh, they are sometimes evaluated harshly by other family members according to their usefulness or economic contribution, particularly in circumstances of extreme poverty. As mentioned by Nahar :

Situation of the lower class old is again different. Poverty makes her children inhuman. They can not fulfill their old mothers basic needs for the want of money. They force their old mother to work in a house or to beg. If she can not bring some money home then there is no food for her. With her weak body she has to go for begging whether it is raining or a sunny day. Sometimes her children become so furious they even beat up their old, incapable mother. (Nahar : Hithoishi 99 : 161)

With socio-cultural changes such as rapid urbanisation, increasing number of women joining the paid labor force in both urban and the rural areas, and a rise in the elderly population, the extent to which traditional expectations fit with the ‘realities’ of life for the elderly in Bangladesh is a question which needs to be addressed.

Conclusions

The aging of population is a worldwide phenomenon, an incluctable consequence of decreasing fertility and lengthening life expectancy. The population 50 years and older is enlarging both in relative and absolute numbers. The structure and relations of families are being modifid by these fertility and mortality changes. Greater numbers of generations live togetehr in families for much longer time periods. New relationships are evolving quickly within these kin groups. As the population age structure rectangularizes, intergenerational and intercohort relations need to be reappraised and altered. The increase of the female pouplation aged 70 or over has important implications for policies and programs concerning families, communities and states. This trends points to the need for increased care and support at the family

level, enhanced opportunities for elderly women to engage in social interaction at the community level and augmented economic security and social services at the state level (Kabir, 1994).

At the same time, there is a sense that the ability and/or winnigness of families to support the elderly is declining and that the elderly themselves have suffered a loss of status in the course of economic and social change. Thus it is likely that these changes will have placed great strains on these exchange mechanism and will have relegated many elders to an increasingly marginal role.

Elderly women, due to lower education and labor force participation, are less likely to have savings or to receive benefits from social security than men, since they tend not to be in the formal sector (Jones 1990, ESCAP 1994). As a result, nearly all of women in rural areas are without pensions and many of who are without land or other assets, financial problem are acute. Elderly with physical or mental disability have no alternative but begging. Policies should address the special needs of women for social protection against economic and physical uncertainties.

It is evident from the discussion that the only way to increase the authority to elderly women in the family sphere is to associate them with gainful income earning sources. Kabir and Salam study (2001) explores that older women are eager to participate in income generating activities if they had better access to microcredit program. So micro-credit programs should be considered to include elderly population taking into consideration their different capabilities and needs. Support should be targeted to the most distressed and vulnerable elderly population such as those who have no family support and who are widowed, divorced.

Older women face different health problems compared with older men. Evidence from a study carried out in Malaysia seems to indicate that, at a given older age, women may face more health problems than men (Tey, 1995). So current and future health needs of older people should be urgently addressed through promotion of health education and information targeting elderly population. Introduction of medical card in the hospital and health center would be an important step in this regard.

The issue of old age security is very much a policy concern in the present Bangladeshi context. Studies show that our senior members of society confront several critical problems such as, poverty, exclusion, unsuitable transport system, poor health service, lack of recreational

activities, loneliness, etc. It is a sad scene to watch an old man jumping on a bus, or an old lady waiting in a queue for a medical test. It is high time that we give some thought to make our old age a little more comfortable and give elderly people the respect they deserve. It is an issue of human rights, no less important than child rights and women's rights.

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The Anatomy of Migration and Ageing : An Introduction to Diasporic Perspective

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ABSTRACT

The migration of elderly citizens to the Indian diaspora occurred basically as a result of the 'family reunion'. Some of the elderly citizens also migrated because no relations left in India when their children moved to their destination countries to seek greener pastures. Apart from this, a new category of 'elderly immigrants' emerged recently in the diaspora who migrated voluntarily in order to search for better quality of life such as good pensions and good old age care in the Western countries. The present paper is trying to make an attempt to put forward the issues of elderly citizens in the Indian diaspora. The first part of the paper will introduce the concept of Indian diaspora and its historical trajectories while the second part will deal with the elderly immigrants in the diaspora in an explicit manner.

Keywords: Ageing, Migration, Elderly, Indian Diaspora, and Spiritualism.

One of the most striking features, which have taken the attention of most of the academicians today in this age of globalisation, is the 'transnational movement of people' and the 'intensification in the creation of diverse diaspora populations in many locations, who are engaged in complex interpresonal and intercultural relationships with both their host societies and their societies of origin (Tambiah, 2000 : 163). In the earlier period people moved either because of the social and economic conditions of the home country or attracted by the images of destination with greater socio-economic opportunities. But the process of globalisation and improvements in

communication technology further provided impetus for individual to migrate. Economic reasons no longer hold strong. The people who are now on the move are labour migrants (both documented and undocumented), highly qualified specialists, entrepreneurs, refugees and asylum seekers or the household members of previous migrants (Brah, 1996; 178). However, the movement of elderly citizens across the national border is being recognized only recently in the field of migration and ethnic studies.

The study of any human population in *general* involves three characteristic features such as : size, distribution and composition. The last feature reflects the percentages of gender and age distribution. Similarly, there are three variables that can change a population distribution such as : the birth rate, the mortality rate or death rate, and migration. The relationships among these variables are simple. For instance, the difference between birth and death rate gives us the *net natural increase (or decrease) of population* and if we add *net migration* to this, we get the population's total growth or decline in a given period. The present paper deals with the third variables of population change that is ‘migration’, and explains how human migration leads to the formation of ‘diasporas’ on the backdrop of the dimension of ageing.

When we use the term ‘migration’, it is not immediately clear what does it meant. Traditionally, the term is being assocaited with some notion of permanent settlement, or at least long term sojourn. But in reality, it is a sub-category of a more general concept of ‘movement’, embracing a wide variety of types and forms of human mobility each capable of metamorphosing into something else through a set of which processes are increasingly institutionally driven. Of course, migration itself is not a singular experience; it takes place under a multitiude of conditions and circumstances, for different economic, political, personal reasons in varied contexts.

In 1990, the International Organization for Migration estimated that there were over 80 million migrants who have moved out of the country of their origin. Among them 30 million were said to be irregular migrants and another 15 million were refugees or asylum seekers. By 1992 the number of migrants increased to 100 million, of which 20 million were refugees and asylum seekers (Castles and Miller, 1993). Now at least a population of 120 million is living out

side of their countries of birth or citizenship (including temporary and permanent migrants as well as refugees). A majority of them are international migrants who are potential immigrants in countries of their destination and who often coverage into diasporic communities (Sahoo, 2001; 12).

Diaspora : The Concept

The etymological meaning of the world 'diaspora' is made up of the two fragments from the Greek word, '*dia*', means through, and '*speiro*', means scatter. The word was sepcifically used to indicate the experience of the Jews exile to Babylon after Nebuchadnezzer's conquest over Jerusalem in 587 BCE (Sahoo, 2003; 159). For Jews, Africans, Palestinians and Armenians, diaspora signifies a collective trauma where one dreams of home while living in exile (Cohen, 1997). For Khaching Tololyan, the editor of the journal *Diaspora* - a journal of transnational studies - this concept includes the entire 'semantic domain that includes words like imigrant, expatriate, refuges, guest workers, exile community, overseas community, ethnic community' (1991 : 4). In a critique of such far-reaching definitions, William Safran has attempted a kind of 'ideal type' representation of the diaspora. According to him the concept diaspora refers to the 'expatriate minority communities, dispersed from an original "centre" to at least two "peripheral" places. They maintain a memory or myth about their original homeland; they believe they are not, and perhaps cannot, be fully accepted by their host country; and they see the ancestral home as a placer of eventual return and a place to maintain or restore. The collective identities fo these diaspora communities are defined by this continuing relationship with the homeland (Safran, 1991; 83).

Until the late 1960s, there were extensive studies on three classical or traditional diasporas viz. Jewish, Armenian and Greek, of which the ideal case was the first. For the last four decades, many dispersed communities, those once known as minorities, ethnic groups, migrants, exiles, etc., have now been renamed as 'diasporas' either by intellectual and political leaders, or by scholars and academicians. Today intellectuals and activists from various disciplines are increasingly using the term 'diaspora' to describe such categories as 'immigrants, guest workers, ethnic and racial minorities, refugees, expatriates and travellers' (Vertovec, 1997;

277). As Marienstrass (1998) points out, the concept of diaspora used today increasingly to describe any community, which in one way or other has 'a history of migration'. The concept has also been regarded as useful in describing the geographical displacement and/or deterritorialisation of identities, cultures and social relations in the contemporary world (Gilroy, 191; Hall, 1993). This new diaspora discourse has replaced the former interest in immigration and assimilation to an interest in 'transnational networks' (Bhat and Sahoo, 2003; 145). Thus the concept of diaspora used today as the processes of transnationalism, as well as the salience of premigration social networks, cultures and capital, in a wide range of communities which experience a feeling of displacement (Clifford, 1994; Safran, 1991; Tololyan, 1991). Further through the constant mobility of people, labour, resources and cultural commodities, immigrants are now actively construct 'transnational social field' that extends beyond the single location, forming a kind of *social field* in which they maintain familial, economic, political and cultural ties (Sahoo and Bhat, 2003; 97).

The Indian Diaspora

Although Indian migration has been taking place for centuries, but never before in history, India witnessed such massive movements of people from India to other parts of the world as in the 19th and early 20th centuries (Bhat, 2003; 11). Among the immigrants of diverse nationalities, overseas Indians constitute a sizable segment while making the third largest group, next only to the British and the Chinese. The migration history of Indians can be categrized unsder two headings : (a) colonization, and (b) large scale economic change that provided impetus for migration of Indians to other parts of the world. Besides these two factors, migration of Indians often describes in terms of push and pull factors. Push factors like economic decline, widening inequality, increasing poverty, social displacement, crime and political crisis have been the main drivers of emigration of Indians. Pull factors on the other hand, such as a chance of a better job, better education and better standard of living etc., which has provided impetus for Indians to move to other parts of the word.

However, a new category of Indian immigrants emerged in the Indian diaspora recently who proportionately less in number but

visible, are people above the age of 55 years - in a generic term called 'elderly immigrants'. They have migrated either because of the economic development of the western European countries or as a result of decolonisation of Indian society after 1950s. Majority of them today have settled and worked most of their life in the countries of their adopted lands.

The issues of elderly immigrants in the fiaspora today become a serious debate as far as homeland and host society is concerned in terms of their socio-economic and cultural well-being. However, it is pertinent to say that the mainstream gerontological and sociological approaches to ageing have failed to examine such issues of ageing in the diaspora. This means that theories of ageing often exclude experiences outside the 'homeland' domain. Here, homeland includes those theories of ageing that have relied on Indian society to measure personal power and fulfilment in later life.

Who are these elders in the diaspora ?

The elderly immigrants in the diaspora can be classified into three major categories such as :

- Elderly immigrants who moved out of India to other countries at a relatively young age and are ageing there.
- Elderly immigrants who moved at an older age in search of a better/ later quality life, and have been living in the diaspora at present and might live for remaining life or in the process of returning home.
- Elderly relatives, mostly fathers and/or mothers of earlier migrants who are living in the diaspora, and who are brought over to diaspora by their children.

The first category refers to the second and third stream of Indian migration especially those Indians who migrate during and after 1950s or 1960s and stayed in the host society for a period of over 30 to 40 years or so. The second category is often difficult to define because sometimes the elderly citizens migrate when there is no point in staying at home. This part I will discuss in detail in the later part of the paper. The third category is of recent advance, which has become significant nowadays in the diaspora studies. The immigrants those who migrated at an early age in search of greener pastures to other countries, have tried their best to reunite themselves

with their family members, even though after a 'long walk'. The migration of this type took place only after 1950s and 1960s, and which is still continues nowadays.

Migration of Elderly

The age -old tradition of India - the parent child relationship - is very much presence wherever the Indians have settled, as it is rightly pointed out by Jawahar Lal Nehru : "Wherever Indians go they take a piece of India with them". But often conflict arises within the family, especially among the younger generations in order to cope up with the so-called 'parents of tradition'. This is an obvious issue in the post-modern era, where single family is the most preferable choice. Most of the parents often think that the relationship with the children to be the most important measure from which to judge their own well-being. But when the children grow older, problems within the family do arise because, according to the parents, they behave too uninhibitedly and they do not show enough respect for the authority of the elderly. Once the children have left the house, sometimes little social life remains, even if the children try as hard as they can to give their parents some attention. As Paramjit Judge (2003; 237) points out some of the 'elderly men and/or women migrate because no relation is left in India to look after them once their children migrated to their destination countries'. This has been the serious factor in most of the cases of elderly immigrants. Migration of elderly is also caused due to work or marriage or holiday purposes in addition to family reunion. A major part of the migration of elderly persons to other parts of the world occurred as a result of the 'family reunion'. Besides this, there are another set of elderly emigrants who have migrated voluntarily to the Western countries in order to search for better quality of life such as good pensions and good old age care.

Ageing in the Diaspora

After successfully migrating to the new landscape often the elderly immigrants - both in case of voluntary migrants and parents of those who went for family reunion- face certain common socio-psychological problems such as sudden separation from home and family (feeling of homesick), the disclosure of various extreme stress situations (especially in the working environment), besides finding it difficult to adjust with the new climate, language, people and thereby

community at large. Moreover, when they settled properly these initial problems of course disappears, but some new and different problems used to crop up.

There are series of issues which the elderly immigrants confront in the diaspora such as : the relationship with their children who have turned the respecctive countries citizen; feeling of homesickness for their own country; diaspora of relatives over many countries across the world; a poor income situation unable to work and pension; the complexity of rules and procedures linked with legal residency and little social recognition etc. Besides this, the elderly immigrants also face sometimes the situations of ‘stress’. Firstly, they just like anybody else, have to deal with the loss of physical functions; secondly, they have to find their way in a culturally unfamiliar environment that ascribes different meanings to the concept of old and in which the elderly are treated differently than they are used to.

The change of environment as a result of migration frequently confronts elderly with new demands, which they are not ready or able to meet - willing to cope up but unable to do that. The elderly immigrants often experience a situation of anguish after migration but gradually recover from it and eventually adjust to the new environment through the process of acculturation. Difficulties in the process of acculturation lead to cultural shock of the elderly in the diaspora.

It is observed that, most of the elderly immigrants are highly educated in India but unable to find a suiable job at their level in the respective countries. This has affected their sense of self-esteem and at later age, their self-understanding as well. Sometimes they also face high risk of becoming socially isolated, because they do not succeed in mastering the language of the host country soon. Which is why because, most of them tend to live with their families and in ethnically homogenous areas, as a result, they have to spend most of their time speaking their own language of origin. Again, it is also very difficult to learn a new language in new culture at such stage.

Given the circumstances even if they are offered the possibility, some elderly immigrants do not feel motivated to study the language of the host country. There are several reasons for this :

- Firstly, some of the elderly immigrants believe that they are too old to learn anything new.
- Secondly, most of them have never studied other languages or are even illiterate and find the idea of participating to a language course too difficult.
- Thirdly, many of them are unwilling to participate in language classes with younger people, because they are afraid of the attitude that the youth would have towards them.
- Lastly, a common assumption of most of the elderly immigrants is that they do not need to be able to speak the language of the host country in order to manage their daily lives, especially because in their cultures it is the task of their children or other younger relatives to take care of the elderly.
- Besides these four important factors, poor health also plays an important role for elderly immigrants in making it difficult to attend classes.

In general, it has been found that unvaourable socio-economic position and low level of education correlate with poorer health. A large proportion of elderly immigrants encounter these unfavourable conditions than the rest of the population in the diaspora. A couple of risk factors which are specific to immigrants are such as high uunemployment and incapacity rates as well as previous stressful working conditions, including experiences of xenophobia and racism as well as feelings of homesickness and dislocation. All these factors lead to the elderly immigrants to preceive themsleves less healthy than other elderly people.

Elderly immigrants often consider important to live with or close to their family, or to live close to a place of religious places, or where other facilities are available, or simply wants to live with people from their own ethnic background. When this is not possible they feel a sense of social isolation. The preference of many elderly immigrants to live in their extended families often rejected by their children as a result of the fear of over-crowdedness, because in the post-modern society especially in western countries preferences always given to single family than the traditional joint family.

New Diasporas in the "Homeland"

For the last few years it is observed that a new kind of 'reverse migration' is taking place both in case of India, China and other developing countries which had provided chief, docile, and indentured labours to various British, French and Dutch colonies during colonial times, and subsequent periods to the developed countries. This new trend is called as the "Home Coming of Diaspora". Intellectuals and academicians best describe this phenomenon as *reversed diaspora.* As Clifford (1994 : 307) points out, 'return home, to the land of its remote ancestors, is the negation of a diaspora'. The sentiments among the Indians in the diaspora once reflected in the definitioin of "being away" now turns to be a felling of "being at home", and the elderly immigrants play important role in this process. The elderly immigrants are more reluctant to leave their adopted country and return to the homeland because of several factors. The strong emotional attachment to the homeland is the motivating factor in most of the cases. Besides these personal factors, other factors, which pull these diasporans to the homeland, are such as the development of the socio-economic conditions in the homeland and a sense of desire to return homeland within the heart of the immigrants itself.

The homeland government often plays crucial role to encourage this new trend of migrants. For instance, the Government of India recently developed initiative towards bridging the gap between India and Indian diaspora. It established departments and units within ministries of foreign affairs to deal specifically with the interests of diasporic communities. The Government also formed a High Level Committee (HLC) on Indian diaspora in the millennium year with the help of Ministry of External Affairs (MEA) to speciafically look after the issue of Indian diaspora. Observation of Pravasi Bharatiya Divas in January 9th every year - also called the 'Home-Coming of Diaspora' - shows such cultural bridge between India and Indian diaspora. The other significant milestone of this Pravasi Bharatiya Divas program is to confer Dual Citizenships to the People of Indian Origins (PIOs) and Non-Resident Indians (NRIs).

Policy Prespective

The common perception of the general masses is that the elderly citizens are of no value, but in reality, the elderly citizens are the most experience persons having wealth of life experience,

knowledge and skills. They have connections with the past, present and insight to help to shape the future. Therefore, policymakers, planners and those engaged with elderly citizens agenda should address this growing group and their recognition. Policy responses to ageing until now have tended to focus on provision of care and income security for older persons, which remain important but inadequate to the scale and rate of ageing now occurring and projected to intensify in coming decades. Sociologist should encourage pursuing studies in policy related areas of ageing where the findings may have practical and realistic applications.

The concern for developing a multilateral framework to look after the issues of ageing in the diaspora, I think, should be placed firmly on the HLC's agenda. A coherent policy is needed to address the situation of elderly migrants in the diaspora, depending whether they remain in want to stay in the host society or desire to come back to the motherland. A comprehensive action should be made at the political and legislative level too, to protect the rights of elderly immigrants, to ensure their social inclusion and well-being at such a delicate stage of their life, and avoid that they are subjected to a dual discrimination, both as elderly and immigrants. The HLC therefore should form a special committee with experienced persons of Indian diaspora to look after the following points :

- To emphasize on research about the situation of elderly immigrants in the Indian diaspora. This research should focus on the issues such as demography, social inclusion, legal status, pension and other social rights of elderly in the diaspora.
- The committee should formulate policies with the suggestion of Ministries of Labour, Health and Social Affairs and in consultation with the voluntary sectors, community organizations and the elderly immigrants of the diaspora who have first-hand experience of ageing.
- The policy should further encourage the maintenance of linkages between elderly immigrants in the diaspora and in India through the organization of cultural events, exhibitions and art performances and the support of language courses.

- Lastly, the policy should promote socio-gerontological research for better understanding of the situation of elderly immigrants in the Indian diaspora.

Spiritualism and Diaspora

The discourse surrounding the role of spirituality among diasporic communities has expanded exponentially over the last few years. Similarly, the conglomeration of communities beyond caste, class and race under the symbol of "spiritualism" has expanded seriously. Indian diaspora - not to say in exaggeration - is one of the unique diaspora among all the major diaspora like Jews, British, Black and Chinese diaspora all over the world, because of its spiritual dimension which adds to its grandeur. An excellent example of such spiritual community of India which has spread across the geographical boundaries and which has regarded as one of the living spiritual movement in the world today is the "Sathya Sai Baba Movement".

Sathya Sai Baba is a highly revered spiritual leader and world teacher of Dravidian ancestry. He is considered as the reincarnation of the earlier Sai Baba of Shirdi, a Hindu-Muslim saint who died eight years before Sathya Sai Baba's birth. The spiritual movement gained momentum in 1940 when Sathya Narayan Raju - the childhood name of Sri Sathya Sai Baba - proclaimed himself that 'he was the reincarnation of Sai Baba of Shirdi and his mission was to bring about the spiritual regeneration of humanity by demonstrating and teaching the highest principles of truth, righteous conduct, peace, and divine love'. Sathya Sai Baba has always placed emphasis on 'service'; i.e., service towards society. Free medical and health services to the poor and aged, and rural development for improving the living conditions of the poorer sections of society are some of his major constributions. Sathya Sai Baba's religious movement is not confined to any caste, creed or religion; instead, it embraces all castes, religions and people of all ethnic backgrounds of different countries of the world, irrespective of gender. Currently, there are more than twelve million devotees of Sathya Sai Baba claims to be living around the world and there are 2,000 Sai Baba Centres spread across 137 different countries for promoting the religion.

Charisma and Charity in Sai Baba Movement

Sathya Sai Baba, who claims to be the beholder of strong charisma and psychic power, engendered perhaps a million followers or more who believed that he is God Himself. Although his miracles have been disputed by many people, but still he is in line with the Hindu *bhakti* beliefs which considers the relation between the divine and phenomenal worlds, including the power of the self-realized person or avatar to intervene in natural processes. Babb (1983 in Kent 2004) argues that it is the miraculous that is the absolute axis of the movement since the teachings contain nothing unique or remarkable - they are typical of Hindu devotionalist (bhakti) movements in general. It is a fact that, as far as the West is concerned it is the miracles that attracted many followers and transform people into devotees. The miracles that attracted many followers and transform people into devotees. The miracles that the Sai Baba performs initially create a quasi-contractual relationship between Sai Baba and the devotee (Kent 2004 : 48). The devotees in this sense forge a social bond while exchanging their compassion with the gifts which Sai Baba materialises. This compassionateness of devotees ultimately turns into 'charity' in the portrayal of *seva*, which is an integral part of Sai Movement. As Kent (ibid : 48-50) points out 'the gift exerts a grip upon its recipient, obliging him to receive and later to reciprocate'. As a social actor, Sai Baba puts his devotees under contractual obligation to him, commanding their participation in the implementation of the mission, in exchange for his possible delivery of God's grace. In return the devotees see Sai Baba and his teaching as unquestionable truth - the direct outpouring of universal divinity.

There is evidence and testimony that much good service work has done both by Sai Baba followers who are volunatry workers - and many who are non-enrolled participants in Sai Baba Organisation activities. Although the spiritual movement is entrenched with Hinduism, but it is stark contrast to the Hindu belief of dharma, in other words *danadharma* (see Parry, 1985) giving gifts to the Brahmin. The charitable works in Sai movement is move not 'upwards' towards the sperior and disinterested Brahmin, but 'downwards' towards poor and needy (Kent 2004 : 57).

Looking at the issues and problems of elderly immigrants in the diaspora, the Sathya Sai Baba Centres throughout the world have adopted Old Age Homes as one of their community service projects. The devotees as part of their seva ritual engage in various activities, which are directly related to the elderly immigrants in the diaspora. For instance, Sai devotees recurrently visit the old age homes, day-care centres, and elderly houses to look after the elderly citizens where they helps the elderly in their day-to-day activities. The participation of both men and women in doing *Sai Seva* keeps the aspiration of elderly in tact. The work, the male members engage in this *Seva* are basically manual jobs, while the female members execute homely activities such as cleaning the rooms of the old folks, tidy their beds and sweep the floors and so on. Devotees take turns sometime to cook different dishes in their homes to provide variety in the meals. There are some elderly immigrants who prefer to cook their own food, and for them assistance is given in the form of food parcels and help in cooking. While this is a monthly feature of the service activities of most Centres in the world, the tradition of celebrating the festivals is not forgotten. During important festivals such as *New Year, Deepawali, Christmas, Durga Puja,* devotees collects material from donors and well-wisher such as food parcels, cloth and cash gifts and distribute among the elderly immigrants.

To sum up, it is said that the Sathya Sai Baba group is not only a religious sect but also a charitable trust, which serves the world through charitable works and in a way helps the elderly immigrants in the diaspora to overcome their burden. The movement in other words could be called as a sect, based on devotion, belief, love and service. As Sathya Sai Baba states in one of his discourses : 'there is only one religion, the religion of love. There is only one God, and He is omnipresent'.

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Book Review

***Good Bye to Old Age*. Dr. V.S. Natarajan,** Geriatric Physician, Published by All India Federation of Pensioners Association, Chennai

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Everybody knows that old age and death are inevitable. However, everyone would like to have reasonably good health during old age, so as to have good quality of life, during the closing stages also. In the recent years, life span of the people has been known to have increased, thus leading to a sizeable increae in the population, in the higher age groups. Some of the adverse health conditions obtaining in higher age groups can be prevented and controlled, and the quality of life can be improved. It is necessary for everyone to be aware of the important ailments, which seriously impair the health and normal life of elderly persons, besides the preventive and remedial measures for these ailments.

The author, Dr. VS Natarajan MD, FRCP (Edin), DSc (Hon) is the first Indian medical professional, to undergo advanced training in Geriatrics in UK for 4 years. He is the first person, to start a separate Geriatric Dept. in India, at Government General Hospital, Chennai and the first Professor of Geriatric Medicine at the Madras Medical College. He is the recipient of Dr. BC Roy National Award, British Geriatric Society's fiftieth National Award at London, Sat Paul Mittal National Award of Nehru Sidhant Kender Trust, Ludhiana. Appointed Emeritus Professor and also conferred Honorary degree of Doctor of Sciences by Dr. MGR Medical University Chennai. He has to his credit, more than 50 research papers and published many Tamil and English books.

Besides Contents, Preface, Foreward, About the Author and Photograph of the author (both on the back page) it has 25 Chapters, the various topics discussed therein include : Successful Aging, Lifestyle and Longevity, Why a Geriatrician ? Heart Attack, Hypertension in the elderly, know about your Cholesterol, Anaemia, Mind your joints, Osteoporosis, Keep moving, Nutrition for better health, Polypill or natural diet, Constipation, Insomnia, Depression, Dementia, Parkinson's, Beware of drugs, Disabilities, and Tips for healthy aging.

Starting from explaining what is successful aging, and planning for a longevity in chapter 2. In chapter 3, he explains the reasons, why a Geriatrician is required, especially due to the multiple problems and multiple

diseases. Chapter 4 talks about the most important single cause of death in old age, viz., heart attack, its 3 types, silent heart attack, its prevention and its management, medically and surgically. Hypertension, another most important problem encountered, is the topic for Chapter 5, and it covers risk factors, treatment i.e. non-drug therapy and drug therapy. Chapter 6 discusses about cholesterol, covering LDL, HDL, causes, diagnosis, self help and treatment. Chapter 7 talks about Anaemia, its causes, signs, symptoms and treatment. The joints are a common problem in advancing years, and Arthritis of joints is discussed in Chapter 8, covering risk factors, genetics mechanical aspects, management of this problem, side effects of analgesics, physical therapy and surgery.

Chapter 9 takes up Osteoporosis, i.e. low bone mass. It explains the clinical features, diagnosis, predicting of fracture risk, treatment options, non-pharmacological interventions and general measures. Chapter 10 states that things must keep moving. It talks about physical activity, health benefits, benefits of exercise programmes for older persons, types of exercises, warning symptoms for excessive exercise etc. Chapter 11 discusses about nutrition for better health, covering dietary requirements, for protein, fat, vitamins, minerals, water and roughage, and gives some suggestions for health and enjoyable eating. Chapter 12 discusses the polypill or natural diet, which can lower the risk of heart attack and stroke, substantially. Chapter 13 talks about Constipation and gives its causes and methods of its management, through high fluid intake, regular exercise, intake of dietary fiber etc. Disturbance of sleep is discussed in Chapter 14, wherein the author gives its causes, clinical evaluation, sleep history, treatment, ways to improve sleep and drug therapies. One of the most common psychiatric disorders among the elderly viz. depression, is taken up in Chapter 15, it gives, its symptoms, medical factors causing depression, risk factors for suicide, diagnosis, treatment and helping the depressed person. Chapter 16 takls about dementia, Alzheimer's disease and its warning signs etc. Chapter 17 discusses Parkinson's disease, symptoms, movement/ speech/ mental difficulties, management of the disease, and helping with mobility. In Chapter 18, the author gives the classification, symptoms, signs, treatment and other causes of tremors.

Stroke, the second major cause of death in the world, is disccused in Chapter 19, which includes its symptoms, mini stroke, risk factors, its management and its prevention. Chapter 20 takes up diabetes, which requires lifelong treatment. It discusses about diet, exercise, low blood sugar, examination and care of the prostatic disease of males in the higher age group, wherein its symptoms, diagnosis, rating of the symptoms, tests to be done, treatment and operative treatment are explaned. One of the most dreaded diseases viz. Cancer, is the topic of Chapter 22, wherein the author explains what it is, and what it is not, gives details of its prevention and early detection, warning signals, and current recommendations for cancer screening and treatment. Chapter 23 talks about harmful effects of drugs esp. in cases of self-medication, and over medication, effects of multiple drugs, guidelines to elders, and drug related problems commonly seen in the

elders. Chapter 24 discusses the dysfunction caused due to disability, and types of activities of daily living, consequences of disabilities, potential consequence of prolonged bed rest, instability and its causes, extrinsic causes, dependency, and planning a rehabilitation programme. Finally Chapter 25 gives tips for healthy aging, under 2 groups, medical and socio-economical.

In the beginning of the book, Contents, Preface and Foreward by Deendayalan IPS, President All India Federation of Pensioners Association, Chennai, have been given. Acknowledgements have been covered under Preface. The book has been dedicated (given in Preface) to, Adhiparasakthi and spiritual guru Arulthiru Adigalar of Melmaruvathur. The reviewer however, came across a few minor printing mistakes.

The book is based on author's rich knowledge and experience in hospital and teaching. The topics have been carefully selected, from the point of view of the problems of elders. Among special features of the book are, its simple language, lucid style, coverage of symptoms, causes, prevention and treatment of various relevant diseases, assisted by 9 tables and 2 figures and conclusions given in all the Chapters, except Chapter 3 and 25. All these draw the attention of the reader to the basics, being communicated by the author.

Summing up, the learned trained and experienced author, has made a valuable contribution, especially for elders, by writing this informative and useful book. It provides adequate information, which the readers can understand, assimilate and utilize for their own benefits, and that of their friends. It is considered very useful positively for those above 50 years of age, but also for students of medicine and practising doctors, and the public at large, which will generate considerable amount of desirable interest in Geriatrics.

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A Report on Training cum Workshop on "Health Care for the Elderly"

5th February' 05

One day training cum workshop was organized on health care for the elderly on 5th February under the auspices of Department of Foods and Nutrition, WHO collaborating center, UGC-DSA programme along with Nutrition Society of India (VAdodara chapter) and Indian dietetic association (Gujarat chapter) at the faculty of Home Science, The M.S. University of Baroda, Prof. U.V. Mani, Head of Dept. of Foods and Nutrition and WHO Collaborating center, Co-ordinator UGC-DSA programme, gave welcome address. Prof. Pallavi Mehta Convener of the workshop explained the theme and purpose of the workshop. Prof. Prerna Mohite, Dean, Faculty of Home Science congratulated the organizers as the topic was multidisciplinary. The inauguration ceremony ended with vote of thanks by the Jt. Convener Mrs. Komal Chauhan.

Dr. Thakorbhai Patel was the chief guest and Dr. Mrunalinidevi Puar, Chancellor of MSU gave the inaugural address. In his address Dr. Thakorbhai Patel, Ex. Mayor, Vadodara, Ex Health Minister, Gujarat who is himself 91 years said that regularity in life, balanced diet and regular exercise along with involvement in social activities are responsible for his sound health.

Doctors form various disciplines delivered lectures, first session included talk by practicing ENT specialist Dr. Anupam Desai, Eye care by Dr. Shetal Raj from Ahmedabad, Nursing care Mr. Jagtap, Rtd. principal Nursing College, Dr. Birenroy Chauhan practicing Physician on common medical problems. Second session included lectures on dermatological aspects by Dr. Vivek Jain, Dermatologist, Oral cavity problems Dr. Amit Parikh, practicing Dental Surgeon and Bone and Joint disorders by Dr. Tushar Mankad, Orthopedician, Psychosocial aspects were discussed by Prof. Parul Dave, Head, Dept. of HDFS, MSU, Director, WSRC, Mental health by Dr. Rakesh Shah, Superintendent, Mental hospital, Vadodara, and Neurological problems by Dr. Bhavin Upadhyaya, Neurophysician of Baroda. Dietary aspects during old age were highlighted by a slide show and skit performed by students of the department. Programme ended with open forum which was conducted by Dr. Birenroy Chauhan and Dr. Rakesh Shah for te benefits of caregivers from different parts of Baroda. All beneficiaries participated with enthusiasm by interacting with experts regarding their problems as caregivers. Programme received lot of appreciation and positive

feedback from the delegates and there were demands for organizing more such programme in future.

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