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Strong Effect of Age on Dialysis Adequacy in Patients Undergoing Regular Hemodialysis

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ABSTRACT

The issue of optimal dialysis dose and frequency has been a central topic in the delivery of dialysis treatment, we aimed to consider the effects of age on some hemodialysis parameters specially dialysis adequacy by urea reduction rate (URR) and to compare these parameters between diabetics and non diabetic HD patients. Patients with end-stage renal disease (ESRD), undergoing maintenance hemodialysis treatment were considered. The urea reduction rate and body mass index were calculated. The total patients were 60 (F=21 M=39), consisting of 44 non diabetic hemodialysis patients (F=15 M=29), and 16 diabetic hemodialysis patients (F=6 M=10). A significant difference of dialysis adequacy between nondiabetics and diabetics with lower values in diabetic group and a significant difference of dialysis adequacy and creatinine of patients with ages below and more than 50 years old with lower values in older patients. A significant inverse correlation of age with dialysis adequacy in total hemodialysis patients and a significant inverse correlation of age with serum creatinine were seen. The negative effect of age on dialysis adequacy needs more attention to this aspect of older hemodialysis patients to reduce the dialysis complications which is frequently observed in these patients.

Keywords : Hemodialysis, Age, Urea Reduction Rate, Diabetes mellitus

Until recently, elderly patients were offered renal replacement therapy, either in the acute or chronic stages of their illness. Trends have changed and now over 35% of chronic dialysis patients are 65 or older, when starting dialysis therapy (Vanita Jassel S. and Roscoe J.M., 1999). Currently, there are around one million chronic dialysis patients worldwide. More than half of these are older than 65 years. For various reasons this is a fast growing population (Bernaert P. 2001). Growing acceptance rates of elderly patients for dialysis requires a careful consideration of their specific problems during hemodialysis (Grun R.P. *et al.*, 2003). From the beginning of the dialysis era, the issue of optimal dialysis dose and frequency has been a central topic in the delivery of dialysis treatment, because among patients with end-stage renal disease who are treated with hemodialysis, solute clearance during dialysis is determinant of mortality and low urea reduction ratios during dialysis are associated with increased odds ratios for death (Owen, 1993). Many patients enter for regular hemodialysis (HD) are old are prone to some complications of hemodialysis. Patients age by itself affects the hemodialysis procedure and may be complicated by the resultant problems one of which is dialysis efficiency. Low dialysis efficiency may influence nutrition and facilitate as insidious malnutrition. The urea reduction rate is a function of the clearance of urea from the blood by the dialyzer, the length of the individual dialysis treatment, and the volume of distribution of urea in a particular patient (Owen, 1993). Therefore, the urea reduction rate (URR) is a quantitative measurement of an individual patient's urea clearance during a single hemodialysis treatment and can be used as a proxy for the adequacy of solute clearance during a treatment (Owen, 1993). Studies showed patients with diabetes have lower concentrations and urea reduction rates than nondiabetic patients. Possible factors contributing to the lower urea reduction ratios in these patients include compromised blood flow during a dialysis treatment as a result of hemodynamic instability, poor flow through the vascular access for hemodialysis (HD) (Owen, 1993), also women treated with hemodialysis may have higher urea reduction ratios and a reduced odds ratio of death (Owen, 1993). Based on the above mentioned data we conducted a study on

maintenance hemodialysis patients (MHPs) to consider the effects of age and also gender on hemodialysis adequacy by URR and secondly compare these parameters between diabetics and non diabetic HD patients to better recognize the adverse effects of age on hemodialysis.

Patients and methods

This cross - sectional study was conducted on patients with end-stage renal disease (ESRD), who were undergoing maintenance hemodialysis treatment with acetate based dialysate and polysulfone membranes. According to the severity of secondary hyperparathyroidism, each patient being treated for secondary hyper parathyroidism was given oral active vitamin D3 (Rocaltrol), calcium carbonate, and Rena-Gel capsules at various doses. According to the severity of anemia, patients were under IV iron therapy with Iron Source (venofer) at various doses after each dialysis session, all patients were under treatments of 6 mg folic acid daily, 500 mgL Carnitine daily, oral vitamin B-complex tablet daily and also 2000 U IV Eprex (recombinant human erythropoietin (rHuEPO) each patient after each dialysis session routinely. Exclusion criteria were active or chronic infection. For patients predialysis BUN and creatinine and post dialysis BUN were measured. The urea reduction ratio is calculated with the formula $100 \times (1 - [C_t/C_o])$, in which C_t is the blood urea nitrogen measured five minutes after the end of dialysis and C_o is the blood urea nitrogen measured five minutes after the end of dialysis and C_o is the predialysis blood urea nitrogen (Boag, J.T., 1994). Body mass index (BMI) calculated using the standard formula (postdialyzed weight in kilograms/height in square meters, kg/m^2 (Letourneau I. *et al.*, 2003)). Duration and the amount of sessions of hemodialysis treatment were calculated from the patient's records. The duration of each hemodialysis session was 4 hours. Results are expressed as the mean $\pm$ SD. Comparison between the groups was done using Student's t-test. Statistical correlations were found and by using and partial correlation test. Statistic analysis was performed on total hemodialysis (HD), females, males, diabetics and non diabetic's populations separately. All statistical analysis were performed using SPSS (version 11.5.00). Statistical significance was determined at a p-value < 0.05.

Results

The total patients were 60 (F=21, M=39), consisting of 44 non diabetics hemodialysis patients (F=15, M=29), and 16 diabetic hemodialysis patients (F=6, M=10). Table 1 shows patients data Mean $\pm$ SD of age of total patients were 46 $\pm$ 18 years. The length of the time patients had been on hemodialysis were 46 $\pm$ 18 months. The URR of total patients were 57.4 $\pm$ 9%. Mean $\pm$ SD of URR of diabetic group and nondiabetic group were 52.3 $\pm$ 9.5 and 59.3 $\pm$ 8% respectively. Predialysis serum creatinine of total patients was 9 $\pm$ 3.6 mg/dl. In this study no significant differences of age, BMI, duration and sessions of hemodialysis, and URR between males and females were found (p = N.S.). A significant difference of URR between diabetics and non diabetic HD patients was seen (p = 0.006; figure 1). Significant differences of URR (p = 0.007) and creatinine (p = 0.024; Figure 2) between patients with age less than and more than 50 years were seen. A significant inverse correlation of age with URR in total hemodialysis patients was found (r = -0.32, p = 0.014; Figure 3).

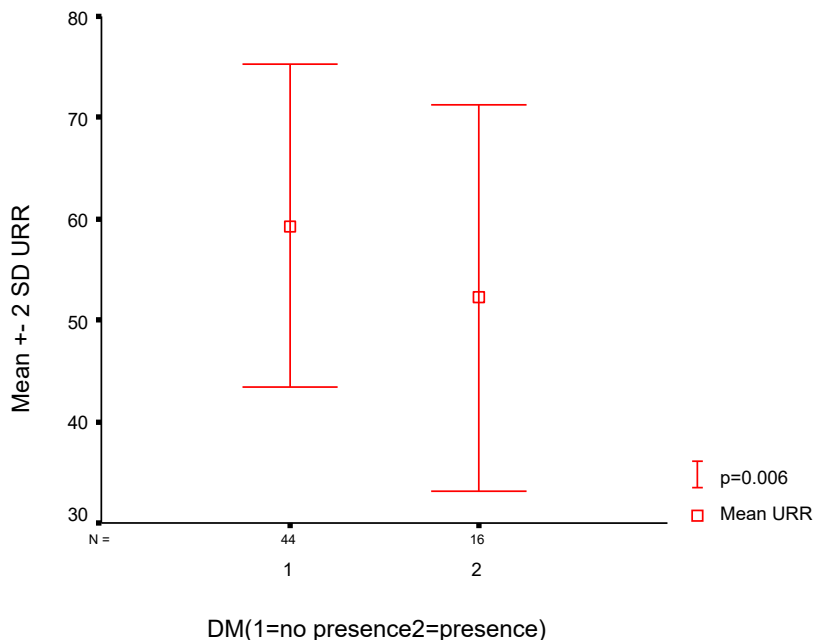


Figure-1 : Significant difference of URR between diabetics and non diabetic HD patients.

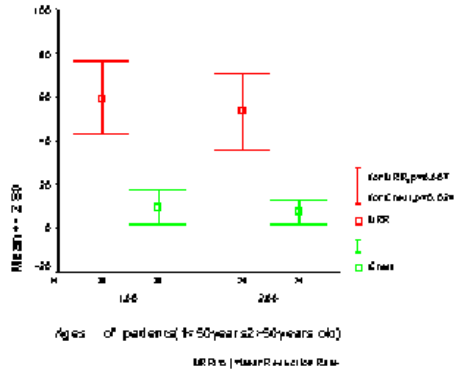


Figure-2 : Significant difference of URR and creatinine of patients below and more than 50 years old.

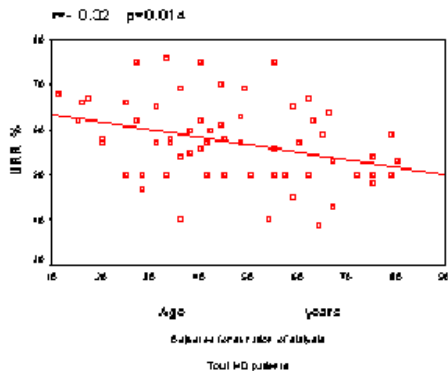


Figure-3 : Significant difference of URR and creatinine of patients below and more than 50 years old.

Table 1: Mean $\pm$ SD , Minimum and maximum of age, duration, dose and also URR of total, nondiabetic and diabetic hemodialysis patients

Total patients n = 60		Minimum	Maximum	Mean$\pm$SD
Age	years	11	80	46 $\pm$ 18
DH*	months	2	156	25 $\pm$ 30
Dialysis dose	sessions	18	1584	219 $\pm$ 321
URR	%	39	76	57.4 $\pm$ 9
BMI	kg/m ²	16	38	22 $\pm$ 4.5
Creatinine	mg/dl	1.5	18.	9 $\pm$ 3.6
Nondiabetics n = 44		Minimum	Maximum	Mean$\pm$SD
Age	years	11	80	42.9 $\pm$ 18
DH*	months	2	156	29.8 $\pm$ 35
Dialysis dose	sessions	18	1584	258 $\pm$ 367
URR	%	47	76	59.3 $\pm$ 8
BMI	kg/m ²	16	33	20.6 $\pm$ 3.8
Creat	mg/dl	1.5	16	9.5 $\pm$ 3.3
Diabetics n = 16		Minimum	Maximum	Mean$\pm$SD
Age	years	27	79	54 $\pm$ 16.7
DH*	months	6	24	13 $\pm$ 6
Dialysis dose	sessions	54	216	114 $\pm$ 52
BMI	kg/m ²	39	75	52.3 $\pm$ 9.5
BMI	index	20	38	24.7 $\pm$ 5
Creat	mg/dl	3	18	8. $\pm$ 4.3

*Duration of hemodialysis treatment

A significant inverse correlation of age with serum creatinine was seen too ($r=0.36$, $p=0.005$) (adjusted for duration of hemodialysis treatment for two correlations).

Discussion

In this study we found a significant difference of dialysis adequacy between nondiabetics and diabetics with lower values in diabetic group and a significant difference of dialysis adequacy and creatinine in patients with age below and more than 50 years old, with

lower values in older patients. A significant inverse correlation of age with dialysis adequacy in total hemodialysis patients and a significant inverse correlation of age with serum creatinine were seen. In a study conducted by Letourneau *et al.* (2003) on ESRD patients with a total of 429 new chronic dialysis patients - 67 ESRD patients over 75 years and 66 patients were between 50 and 60 years, it was found that life expectancy of patients who began dialysis above 75 years is significantly shorter than for patients for whom dialysis is initiated between age 50 and 60 years, especially if they had low weight, lost weight and/or require hospitalization (Letourneau, I. *et al.* 2003). Inverse association of age with dialysis efficiency seriously will influence the life expectancy of older patients. We showed the negative association of age and predialysis serum creatinine we also showed a significant lower predialysis serum creatinine in patients older than 50 years old which suggest insidious malnutrition in these patients that may become more aggravated with their lower dialysis efficacy. In contrast to our finding concerning no significant difference of dialysis adequacy between males and females, in a study on 18, 144 black and white patients receiving hemodialysis 3 times weekly, Owen *et al.* (1998) showed that men had lower URRs' than women, which needs more work in this aspect of hemodialysis treatment (Owen W.F. *et al.*, 1998). In conclusion in this study we showed the important negative effect of age on dialysis adequacy. More attention on this aspect of hemodialysis an older patients in order to reduce the dialysis complications frequently observed in this group.

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Age Differences in Dysexecutive Syndrome Among Non Clinical Sample

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ABSTRACT

Many studies indicate that damage to the prefrontal cortex can result in dysexecutive syndrome (Baddeley, 1986) which involves an individual's inability to monitor actions and to initiate or switch action plans and may bring changes in broad areas such as personality, motivation, behavior, and cognition (Stuss and Benson, 1984). Executive functions follow **an inverted U shaped curve** when considered across life span That is age related improvements in EF occur during adolescence but declines during aging. Children and older adults both show poorer performance relative to young adults on "working memory" and "executive function" tasks (see Zelazo, Craik, and Booth, 2004). The data set (n=60) was collected to examine age differences in dysexecutive symptoms using independent rating about the people without any history of brain injury or psychological disorder across three age groups. Twenty undergraduates rated three people across three age groups: **young adulthood** (20-40 years), **middle age** (40-65 years), and **late adulthood and old age** (60 years and above) on dysexecutive syndrome questionnaire (DEX). Older adults as well as young adults showed significantly more dysexecutive symptoms than middle aged on DEX total scores as well as its factors viz. cognition, emotion, and behavior. Thus executive dysfunctions follow **U shaped curve** when considered across young adulthood to old age. It supports the general findings based on various measures that executive function follows an **inverted U shaped**

curve across the life span. Even presumably normal people may have inhibition and intentionality problems similar to neurologically impaired people and normal people may encounter dysexecutive symptoms in terms of action disorganization or cognitive failures in routine activities (Chan, 2001). Though young adults show an equal amount of dysexecutive symptoms like elderly adults, there may be qualitative differences in terms of localization in orbitolateral versus dorsolateral prefrontal cortex, respectively. Middle aged showing significantly low dysexecutive symptoms suggests that maturation process is implicated in intact executive functioning.

Key Words : Dysexecutive syndrome, Aging, Prefrontal cortex.

The entire period of human existence could be attributed to the single cause of frontal lobe development through the ages. The frontal lobes have long been regarded as the higher cortical center for decision-making, planning and central executive functioning (Chan, 2001). Damage to the frontal lobes, specifically to the pre-frontal cortex may cause the symptoms or syndrome collectively known as “Dysexecutive Syndrome” (Baddley, 1986) which involve an individual’s inability to monitor actions and to initiate or switch action plans and may bring changes in emotion, personality, motivation, behavior and cognition (Stuss and Benson, 1984). The frontal lobe hypothesis generated a series of studies showing that frontally supported executive control functions are more sensitive to age-related speed changes than functions supported by other parts of the brain (Span, Ridderinkhof, Molen, 2004). Based on various sources and forms of measurement Parkin (2002) concluded that normal ageing results in a pattern of cognitive decline reflecting loss of functions associated with the frontal cortex. This decline of function can be characterized in terms of dichotomy of reactive and spontaneous flexibility, instead of a unitary frontal factor like fluid intelligence characterized by ‘g’. Reactive flexibility describes a readiness to shift cognition and behavior freely in response to changing demands of the external situation. Spontaneous flexibility describes the ready flow of ideas and answers in response to a question. Further, Parkin (2002) suggests that dysfunctions of the frontal cortex underlie much of the memory impairments observed as a normal consequence of aging and that this deficit is best understood in terms of an executive memory impairment in which a primary distinction is drawn between deficits of

encoding (associated with left frontal cortex) and retrieval (associated with right frontal region). West (1996) suggested that growing number of researchers and theorists indicate that the cognitive processes supported by the frontal lobes, and more specifically the prefrontal cortex are among the first to decline with increasing age. Shrinkage of cells due to loss of connective process of neurons in the frontal cortex appears to begin earlier and be more severe than in other areas. Further within prefrontal cortex, there also is some evidence suggesting of regional differences in the effects of increasing age, with the dorsolateral prefrontal region demonstrating a linear decline throughout adulthood and the orbital prefrontal region showing evidence of decline only during the late 7th decade and beyond.

Philips and Sala (1998) suggested that there is some consensus that dorsolateral (DL) regions are involved in executive function and spatial working memory, whereas orbitoventral (OV) regions are involved in emotional processing and regulation of social behavior. There is converging evidence for the role of OV but not DL prefrontal cortex in interpreting and regulating emotion. Further they provided various evidences such that DL regions of the prefrontal cortex are involved in fluid intelligence close to a general factor of intelligence whereas OV regions mediate decision making in real life or emotional contingences. OV patients show impaired social behavior which includes: disinhibition, sexually inappropriate advances, boastfulness, misinterpretation of others mood states, impulsivity, and aggressive behavior, yet intact cognitive performance. In contrast to this DL patients show impaired cognitive performance but acceptable social behavior. OV lesions result in impulsivity, aggressiveness, lewdness, and lack of empathy. Such behavior and personality changes are rarely associated with normal adult aging.

Increasing age may be associated with better ability to interpret and regulate emotion, and elderly adults adapt their problem solving strategies appropriately to cope with the emotional demands of social situations. Older adults experience greater emotional control than do young adults across a range of ethnic and cultural groups. Older adults give more appropriate advice in interpersonal problem than did young and middle aged individuals. OV regions of frontal lobes mediate reasoning, which has personally relevant content, in terms of beliefs, values, goals or places. Thus, OV patients do not have a somatic

feeling or instinct. Older adults are more likely to concern with their gut feelings in decision making (beneficial in everyday situations), unlike OV prefrontal patients, who may have an absence of such feelings. OV patients often make disastrous financial decisions, but DL patients didn't show poor decision making despite deficit in working memory. Most problem solving tasks involve integration of the executive control afforded by the DL regions and the motivational and emotional role of the OV regions. Dorsolateral prefrontal cortex is susceptible to the early effects of aging and is involved in the coordination of many other functions (Philips and Sala, 1998).

Smith, *et al.* (2000) showed that the executive component recruit left-hemisphere, prefrontal cortex (PFC) areas, including the dorsolateral PFC, for poor-young performers and seniors but not for good-young performers using four tasks viz. operation span, math, memory and control condition. Span *et al* (2004) suggested that for children age-related gain has been reported in inhibitory control, working memory, response selection, response competition, task-switching, adaptive problem solving and various other planning and problem solving tasks. Executive control functions appear to be differentially sensitive to age. Further they cited evidence suggesting that age but some areas even within prefrontal cortex being relatively spared do not universally affect the frontal lobes. Gokalsingh *et al.* (2000) found that elderly subjects with disinhibition have impaired supervisory system function. Compared to control subjects paired for age, sex, and level of education, elderly with impulsivity behavior disorder have altered performance in tasks involving the control of automatic processes and more specifically in the monitoring and use of the supervisory system. Lowe and Rabbit (2002) found that on the critical conditions of the "stroop test", a "concept shifting" task, and a version of attention shifting task the effects of age remained significant even after variance associated with individual differences in speed on baseline conditions had been partialled out, consistent with the idea that old age brings about relatively early and marked changes in "frontally mediated" tasks. They showed that age related performance on stroop task and concept shifting task known as frontal tasks are not removed when individual differences in scores on the culture fair intelligence test, and so in **gf** are taken into consideration.

Allian *et al.* (2005) suggested that only small number of studies have focused on planning performance in healthy elderly participants with partially conflicting results such that on tower of Hanoi task differences were found between young adults and elderly adults but not when Tower of London planning task was used. However ecological tasks such as kitchenette meal-preparation task and six-element task showed consistent results. Elderly participants were impaired in the anticipation-planning dimensions and on shifting of attention between ongoing tasks. Further, to address the origin of planning impairment They also collaborated a separation between formulation and execution levels of the planning processes using the two versions of Zoo map test. They found that normal older adults manifest planning impairments. Normal aging affects more the capacity to mentally represent complex plans than the capacity to execute these plans.

Zelazo and others (2004) suggested that by now a considerable body of research shows convincingly that there are systematic, age-related improvements in executive functioning (EF) during childhood and into adolescence but EF declines during aging suggesting that the development of EF measured by Stroop color word task, task-switching, and the modified stop-signal task follows an inverted U-shaped curve when considered across the life span. Using preservative error as a primary index of EF, Zelazo *et al.* (2004) found support for the suggestion that EF rises and falls across the life span using visually cued color-shape task. These age related changes in EF across life span could be understood in terms of corresponding changes in the ability to formulate higher-level hierarchical representations in childhood and to consciously select and maintain them in aging. Children and older adults both show poorer performance relative to young adults on “working memory” and “executive function” tasks. Complex cognitive processing requires considerable expenditure of attentional resources, which depends on the integrity of the frontal lobes and the dopamine system.

Chan (2001) suggested that impact of executive dysfunctions might not be manifested merely in terms of pure cognitive level (as in laboratory) but also at cognitive behavioral level in everyday life tasks. Further he suggests that executive dysfunctions may be observed in daily life routine tasks, and can be understood in terms of cognitive

failures, action disorganization, absentmindedness or even personality trait. Further presumably 'normal' people always exhibit 'inhibition' (inability to inhibit behavioral and emotional responses) and 'intentionality' (planning and decision making problems) problems similar to neurologically impaired people (Chan, 2001). Hawkins and Trobst (2000) review of studies provide evidence of a relationship between executive weakness and aggression in the normal subjects suggesting an association between 'subclinical' frontal lobe deficit and a heightened propensity toward aggression. Executive functioning deficit-particularly impaired inhibitory control have been identified in people psychometrically at high risk of later decomposition into a psychotic state (Suhr, 1997). The present study was carried out to see if executive dysfunctioning is observed more in young and adult age groups compared to middle-aged using ecologically valid dysexecutive syndrome questionnaire. Previous studies have focused on laboratory based executive functioning measures. The implications of the study are bright in the light that executive dysfunctions are observed even in presumably normal population.

Method

Subjects:

A data set was collected randomly on people from various places of cosmopolitan city Bombay. To examine age differences in dysexecutive symptoms three different age groups were included. 20 students doing graduation rated three people, which they knew well and in interaction with them in day-to-day life. Each participant rated three people (male (n=30) as well as female (n=30)) in three age groups viz. young adulthood (20-40 years), Middle age (40 to 65 years) and late adulthood and old age (60 years and above). Thus total sample size was 60 and of these rated didn't have/had any history of brain injury or psychological disorders.

Dysexecutive Syndrome measure:

Dysexecutive (DEX) Questionnaire from Behavioral assessment of dysexecutive syndrome (BADS) battery, is a 20-item questionnaire constructed in order to sample a range of problems commonly associated with the dysexecutive syndrome scored on a five point (0-4) likert scale (ranging from "never" to "very often"). DEX-independent rater (by a relative or carer) version was used in this study (Wilson, Evans, Alderman, Burgess and Esmile, 2002). The severity of the

dysexecutive symptoms is based on common symptoms emotion, motivation, behavior, and cognition of executive dysfunctions (Stuss and Benson, 1984). It is a comprehensive measure with three factors viz. cognition, emotion and behavior specifically designed to assess errors of goal-directed behavior in everyday life.

Design

A between groups design was used. Age with three levels viz. young adults (mean age 25 years), middle aged (mean age 40 years) and elderly adults (mean age 60 years) was subjected to one way analysis of variance to yield whether there is any significant age difference on dysexecutive syndrome and it's factors.

Procedure

The DEX-IR questionnaire was administered making small groups (n=10) of students. Instructions were given as per written on the questionnaire. It was ensured that student raters clearly understood the questionnaire and the person they are rating is well known to them.

Result and Discussion

One-way ANOVA across three age groups on dysexecutive syndrome and its' factors yielded following results (table 1 and 2).

Table-1 : Shows mean (SD) across three age groups on DEX and its factors

	Dex-scores		Old-Aged		Middle-Aged Young-Aged	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
DEX-total	37.75	(11.06)	23.70	(11.44)	35.75	(13.64)
DEX-cognition	8.85	(3.64)	5.70	(4.72)	8.45	(4.37)
DEX-emotion	5.85	(1.75)	4.15	(2.06)	5.10	(2.29)
DEX-behavior	14.95	(6.23)	9.25	(3.90)	15.15	(6.24)

Table-2 : Shows significant difference on DEX and its factors across three age groups

Source (I.V.)	D.V.	SS	df	MS	F
Age Groups	Dex-total	2310.7	2	1155.35	7.89*
Old	Dex-cogn.	117.63	2	58.82	3.22**
Middle	Dex-emo.	29.03	2	14.52	3.46**
Young	Dex.beh.	448.93	2	224.47	7.24**

* $P < 0.01$, ** $P < 0.05$

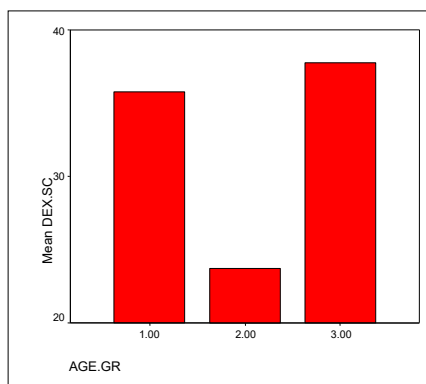


Fig. 1 Showing means DEX scores across three age groups

Summary of above tables 1 and 2 suggest that older adults and young adults show significantly more dysexecutive symptoms than middle aged on total DEX-IR score, its cognitive, emotion and behavior factors. Thus this study supports the general finding that executive functions follow inverted U-shaped curve across age. In other words executive dysfunctions are observed more at extreme age groups (young and old) and relatively intact functioning at middle age (U-shaped curve) in this study using dysexecutive syndrome questionnaire (fig.1). Presumably normal populations do exhibit executive dysfunctions even though it may be revertible. The present finding suggests that aging process in some people may reveal itself in the subtle form of executive dysfunctions, thus indicating that the ratio of cognitive aging to chronological aging may be more in some people compared to others. The study thus supports the EF inverted U-shaped curve across life span with improvements in childhood-adolescence but downfall in senescence. Young-adults and old aged both showed significantly more dysexecutive symptoms compared to middle-aged. These age related changes could be associated with changes in the ability to formulate hierarchical representations in childhood and to consciously select and monitor them in aging. Although elderly adults are capable of high level of conscious reflections and capable of

formulating and using high-order rules it demands resource of working memory that is found to decline with aging process. Complex cognitive processing demands expenditure of attentional resources that depends on the integrity of the frontal lobes and dopamine system (Zelazo *et al.*, 2004). Using preservative errors as a primary index of executive functioning Zelazo *et al* (2004) found support for the inverted U-shaped curve of executive functioning across age consistent with various studies using various measures of executive. The significance of the present study was that it used executive dysfunctioning (dysexecutive syndrome) instead of more usual measures of executive functioning. As expected it yielded U-shaped curve instead of inverted U-shaped curve in supporting the general findings suggesting that people do vary in their executive functioning to executive dysfunctioning poles. As the cognitive processes in general and executive functioning in particular improve with increasing age there may be a process albeit subtle right from the beginning of life which sets a person towards decline in general and executive dysfunctioning in particular. The various cognitive processes in general follows inverted U-shaped curve. It was also found in social problem solving ability in day-to-day life and so close to the ecologically valid measure used in this study. D'Zurilla *et al* (1998) defined social problem solving as the self-directed cognitive-behavioral process by which a person attempts to identify or discover adaptive ways of coping with problematic situations encountered in everyday living. The problem solving ability increases from young adulthood (ages 17-20) to middle age (ages 40-55) and then decreases in older age (ages 60-80). The comparison of these three groups further on five problem-solving dimensions included (a) positive problem orientation, (b) negative problem orientation, (c) rational problem solving, (d) impulsive/careless problem solving, and (e) avoidance behavior. Compared to young adults and elderly (independently) middle-aged individuals scored higher on the constructive dimensions of problem solving. Middle-aged scored lower on the dysfunctional dimension of negative problem orientation, impulsivity /carelessness style, and avoidance style compared to young adults but not elderly. Importantly, the elderly group didn't fall significantly below the young adults on any dimension of problem solving ability instead they were significantly less dysfunctional than the young group on the dimension of negative problem orientation.

Thus, middle-aged individuals have comparatively more constructive, optimistic view of everyday problems and their own problem solving ability and are likely to confront their problems and make use of effective problem solving skills. The superior problem solving ability of middle-aged individuals compared to young adults probably represents the cumulative learning effect of increasing number of independent problem solving experiences. However, the greater problem solving ability of middle-aged individuals compared to older adults may be accounted for more by a significant difference in the kinds of everyday problems faced by these two groups rather than any age deficiencies in basic skill or abilities (D'Zurilla *et al*, 1998).

Shrinkage of cells in the frontal cortex appears to begin earlier and be more than in other areas. In particular in prefrontal cortex- the center of higher order cognitive function (in particular executive functioning)- the dorsolateral (DL) region demonstrates a linear decline throughout adulthood and the orbitoventral (OV) region showing evidence of decline only during the late 70s and beyond (West, 1996). Thus executive dysfunctions in young and older people can be accounted in terms of DL as well as OV decline in old people whereas in young adults it may be the incomplete development of DL and OV regions. Philips and Sala (1998) suggested that OV lesions are associated with impaired social behavior like disinhibition, sexually inappropriate advances, boastfulness, misinterpretation of others mood states, impulsivity and aggressive behavior yet intact cognitive performance. In contrast to this DL patients show impaired cognitive performance but acceptable social behavior. Behavior and personality changes associated with OV lesions are rarely associated with normal aging. Further, the incidences of personality disorders decreases in the course of normal aging. Further, older adults experience greater emotional control than young adults across a range of ethnic and cultural groups. Taken together, age related decline in executive functioning could be better accounted in terms of DL functioning. However as executive dysfunctions are observed even in presumably non-clinical population, it suggests that OV (impairment) may play important role in executive dysfunctioning in young population whereas in old aged it may be the sudden decline of OV in addition to DL decline may account for executive dysfunctions. Middle-aged showing better executive functioning compared old aged can be accounted in terms maturation process in general. However the

relative role of DL and OV needs to be understood in maturation process which is not only the function of age but life experiences as well.

Qualitative analysis based on item-wise comparison across three groups, revealed following most rated problems:

1. Aggression
2. Loss of decision-making ability
3. Euphoria
4. Shallowing of affective response
5. Abstract thinking problem

Most importantly, young people also show equal amount of dysexecutive symptoms like old aged thus requiring attention to address their issues. It is assumed here that more specification of dorsolateral and orbitolateral prefrontal cortex role in executive functioning will explain qualitative differences in executive dysfunction between young people and adults. However middle age group show very less symptoms comparatively, indicating executive functioning has a lot to do with maturation process. Further, DEX can be useful in identifying psychosis prone student/youths and problem can be addressed on time. It is important then to consider age as an important factor in clinical analysis of cases and prognosis in psychiatry.

Conclusion

Young adults are at risk like old aged for dysexecutive syndrome. However qualitative differences are expected. The precise role of maturation in the development of executive functioning needs to be explored further.

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Tears in Old Age

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ABSTRACT

Aging is the sum total loss of certain functions and structures, when a person grows older. One has to understand this process and the problems associated with it to lead happy life during this period. "Tears in old age" is one of them. This is not a disease but it is rather an annoyance, which may be because of varied causes. This review article describes various etiological causes and mechanisms for "Tears in old age". Dry eyes, eyelid abnormalities, naso-lacrimal drainage pathologies, neurological causes, corneal disorders, irritation of lashes and hypersecretion of tears are the some the known causes, among them dry eyes are the commonest of all. The article also deals with the diagnostic, prevention and treatment paradigms for the same. Recent advances related to the cause and target oriented treatment of the tears have also been discussed opening a new avenue for further research.

Keywords: Tears, old age, epiphora, dry eyes

Aging is a normal physiological process in which every system of the body undergoes gradual structural and functional degeneration. With advancing age there is reduced vitality, immunological responses and therefore, the body is vulnerability to various disorders. Excessive watering of the eyes and tears related complaints are common among elderly people. There is a decrease in lacrimal drainage function with an increase in age (Shalin and Chen, 1996)

Overflow of tears, is usually caused by insufficient drainage of the tear film from the eye (epiphora). The most common cause is a blockage of the lacrimal (tear) ducts located next to the nose, but the

condition may also result from the excessive production of tears. Epiphora is a symptom rather than a disease and may be caused by a variety of conditions.

It is important to differentiate between **chronic epiphora**, **acute epiphora**, and **normal tearing**. Chronic epiphora results from a long-standing or continuous disorder, while acute epiphora usually results from a temporary condition such as a foreign body in the eye or environmental factors such as wind, pollen, eyestrain, emotional stress, and sleep deprivation. The chronic variety nearly always requires treatment by a professional, while acute epiphora may or may not require treatment, depending on the severity of the condition.

A portion of tears evaporates, but the excess normally drains into the nose via the lacrimal canals and then into the throat or out through the nostrils. These types of tears are made continuously and are known as basal cell secretions. Reflex tears, on the other hand, are those produced in response to emotions or irritation of the eye. These are produced by a gland, called the lacrimal gland. The volume of tears produced by the reflex mechanism is larger, however, the basal tearing is more important for the health of the eye, but the volume of tears produced by the reflex mechanism is larger.

The function of tears is to lubricate, nourish, and protect the eye from dust and other irritants thus preventing infections. Spread by blinking (about every six seconds), tears keep the surface of the eye optically clear and smooth. Tears flow into the eye through ducts from tiny glands located under the upper eyelids and drain from the eye through small openings near the nose (the puncta).

I. Causes of tears in old age

The common causes of tears in old age are:

A) Dry eye

Dry eye affect 10%-15% of the adults. (Sutphin et al., 2003-2004) The cause of dry eyes is an imbalance in the composition of the tears, decreased tear production or excessive tear evaporation. Like skin and hair, tear production tends to dry up as one get older. When the tear production decreases, eyes become easily irritated. The medical term for this condition is *keratoconjunctivitis sicca*.

Although dry eyes can affect both men and women at any age, the condition is more common among women, especially after menopause. This may be due to hormonal changes. Damage to the tear

glands from inflammation or radiation can hamper tear production. Dry eyes are also associated with medical conditions such as rheumatoid arthritis, lupus, scleroderma and Sjogren's syndrome. The common medications used by geriatric population can also cause dry eyes. These include, diuretics (drugs commonly used to treat high blood pressure), antihistamines, decongestants, sleeping pills, tricyclic antidepressants, Isotretinoin-type drugs for treatment of acne, opiate-based pain relievers such as morphine.

(a) Blink rate

Something as innocuous as a blink can make the difference between maintaining the integrity of the ocular surface and leaving the eye open to the ravages of dry eye. In fact, researchers have shown that a blink facilitates the distribution and formation of the pre-corneal tear film across the cornea (Carney, 1982).

Factors influencing blinking:

(i) *Environmental* : Alterations in temperature, humidity, lighting and airflow can have a profound effect on blink rate. There are conflicting studies evaluating blink rate at different lighting levels (Tinker, 1949), but this may be due to difficulties in accurately measuring blink rate.

Factors that either directly or indirectly affect the ocular surface, such as wind, significantly affect blink rate (Nakamori *et al.*, 1997).

(ii) *Activity-related* : Engaging in conversation can increase blinking, while intently concentrating on a visual task can cause it to drop. One study showed that blink rate went from 17 blinks/min at baseline to 26 blinks/min during conversation, and dropped to as low as 4.5 blinks/min during reading (Bentivoglio *et al.*, 1997)

(iii) *Psychological* : Though the neural pathways that control blink rate and how they are affected by mental processes aren't completely understood, it's apparent that blink rate changes during cognitive function. Blinking increases with excitement, frustration and anxiety, decreases with guilt, reading and occurs when mental load is at its lowest. Most blinks occur with ocular saccades analogous to line changes while reading (Nakamori *et al.*, 1997). The neurotransmitter dopamine and its levels in the central nervous system have been found to be associated with blink rates (Ponder *et al.*, 1928).

(iv) *Physiopathological* : Age, gender and muscular tension and certain disease seem to have effects on blink rate however not all

physiological factors appear to have a significant effect. There appears to be no significant difference between the blink rate of males and females (Orchard *et al.*, 1991). However, alterations in eye position (i.e., looking up or down) may affect blink rate (Nakamori *et al.*, 1997; Karson., 1988) The neurotransmitter dopamine and its levels in the central nervous system have been found to be associated with blink rates (Ponder *et al.*, 1928) **As mentioned** Parkinson's and schizophrenia, decrease and increase blink rate respectively (Hall, 1945).

(b) Tear Film

The eyelids spread tears across the surface of the eyes in a continuous thin film. Studies have suggested that the pre-corneal tear film is composed of three layers composed of oil, water and mucus (Lemp *et al.*, 1998) Problems with any of these layers can cause dry eye symptoms (Figure 1).

(i) *Oil* : The outer layer, produced by small glands on the edge of the eyelids (meibomian glands), contains fatty oils . These smooth the tear surface and slow evaporation of the middle watery layer. When the oil layer is abnormal, the watery layer evaporates at faster rate. Dry eye symptoms are common in people whose meibomian glands are clogged. Meibomian dysfunction is more common in people with inflammation along the edge of their eyelids. It may also be due to skin disorders such as rosacea and others.

(ii) *Water* : The middle layer, which makes up about 90 percent of tears, is mostly water with a little bit of salt. This layer, produced by the lacrimal glands, cleanses the eyes and washes away foreign particles or irritants. A shallow water layer can predispose to tear film instability. If the eye produces only small amounts of water, the oil and mucus layers can touch and cause the stringy discharge.

(iii) *Mucus* : The inner layer of mucus allows tears to spread evenly over surface of the eyes. Dry spots form easily in any part of the cornea that has patchy loss of the mucus layer.

The interaction of the time between blinks (the inter-blink interval, or IBI) and tear film breakup time (TFBUT) regulate ocular surface integrity. A protected surface exists when the TFBUT matches or exceeds the IBI. In contrast, the surface is unprotected when TFBUT is less than the IBI. This is clinically relevant, since intermittent exposure of a tear-film-deficient cornea leads first to

ocular discomfort, then to clinical signs of keratitis and redness (Ousler and Abelson, 2001) The development of an ocular protection index quantifies the interaction between the IBI and TFBUT, and seems to be useful in assessing the factors that cause dry eye.

As TFBUT decreases, in dry eye (Yolton *et al.*, 1994) blink rate increases (Al-Abdulmunem, 1999; Yap, 1991) and pathological conditions such as dry eye worsen. It is shown that subjects experienced discomfort shortly after breakup occurred (Cho *et al.*, 1997) Research has shown that an increase in corneal sensitivity can increase blink rate (Nakamori *et al.*, 1997; Tsubota *et al.*, 1996) and this may be a driving force behind blink rate.

B) Eyelid abnormalities

Since it is pointing inward toward the lacrimal lake, an observer looking directly toward the eyelid cannot see the punctum. Malposition or eversion, more commonly, is an acquired anomaly in older individuals with eyelid laxity and senile ectropion (outward turning of eyelid margin) where the punctum is rotated vertically away from the globe. If the punctum is visible with the slit lamp without manipulating the eyelid, medial or punctal ectropion exists. Many patients with medial ectropion complain of tearing because of failure of the punctum to capture tears in the lacrimal lake. Long-standing medial ectropion and punctal eversion lead to stenosis or occlusion of the lower eyelid punctum, which is another cause of epiphora. Conjunctiva in the area may become injected, thickened, or keratinized due to chronic irritation. In most patients with lower eyelid punctal malposition, the cause is excessive horizontal lower eyelid laxity.

Ectropion may be mild or severe and may involve all or part of the eyelid margin. It progresses from punctal eversion to generalized ectropion. Horizontal laxity of the eyelid may be assessed by the snap back test. This test is performed by placing a finger on the inferior orbital rim and pulling the lower eyelid down. The eyelid is pulled away from the globe and released. If it fails to “snap back” into approximation with the globe without a blink, the test is considered positive, that is, horizontal laxity of the lower eyelid is present. If the eyelid snaps back against the globe without a blink, the test is considered negative. The lower eyelid is also considered lax if it can be passively stretched more than 6 mm from the globe (Liu and Strasior, 1983). Lower eyelid laxity due to laxity of the LCT (lateral canthal tendon) may be diagnosed by directing gentle digital pressure

in a nasal direction along the center of the lower eyelid. If this draws the lateral canthal angle closer to the temporal limbus, LCT laxity is present. In a similar manner, MCT (medial canthal tendon) laxity may contribute to overall laxity of the lower eyelid and may be diagnosed by directing lateral digital pressure on the eyelid. If the lower punctum is displaced temporally, MCT laxity is present. Medial ectropion or punctal eversion is a subset of involutional ectropion and is often the first sign of impending generalized involutional ectropion. Medial ectropion is manifest by ectropion of the medial one third of the lower eyelid.

C) Nasolacrimal drainage system pathology

True lacrimal obstruction or dacryostenosis, is much more common in elderly. As much as 3% of the patients visiting the clinic are thought to be related to this problem (Colin *et al.*, 1978). It has been recognized that acquired dacryostenosis is a problem of elderly persons and that women are affected four times more often than men (Linberg *et al.*, 1986). The exact pathogenesis of primary nasolacrimal duct obstruction remains unclear, although chronic inflammation with secondary fibrosis of mucosal tissue seems to be an important factor. Obvious stenosis of the puncta or the canaliculus due to senility, inflammations or tumor can cause obstruction in the drainage path of the tears. The fact that the basal rate of tear secretion progressively diminishes after age of 40 years (Henderson and Prough, 1950) suggests that many patients probably have complete lacrimal obstruction but no epiphora owing to their small tear volume.

Inflammation of the canalicular system can occur secondary to dacryocystitis, but isolated bacterial infections of the canaliculus are rare. Perhaps the most common infection is caused by *Streptomyces*, *Actinomyces israelii*, or *Arachnia propionica* (previously mislabeled as *Streptothrix*). Fungus infections (Jordan, 1997) with organisms such as *Candida albicans*, *Aspergillus Niger*, *Nocardia* and *Pityrosporum Pachydermatis* (Romano *et al.*, 1978) have been reported. However, action-mycotic infection is by far the most common (Jordan *et al.*, 1997; Richards, 1975). In the clinical presentation, the lower canaliculus is usually involved and the patient complains of epiphora, Swelling and inflammation of the lid medially are noted. The punctum is swollen and red, with mucoid or mucopurulent discharge, irrigation may or may not be possible through the canaliculus, and a small probe may encounter gritty resistance. Diagnosis is made on expressing

yellow-tinged concretions from the canaliculus. On cytological examination, they show Gram-positive branching filaments. If the classic symptoms are absent, high-resolution ultrasonic examination (transducer frequency of 20 MHz) of the lacrimal drainage system demonstrates concretment (sulfur grains), measuring 1-2 mm in diameter (Tost *et al.*, 2000)

When there is a stenosis of nasolacrimal duct patients may present with symptoms of chronic epiphora, conjunctivitis, and low-grade infections or with acute dacryocystitis. The clinical syndrome is most common in elderly Caucasian women. Stones in the lacrimal sac usually are not of fungal etiology. Studies have revealed inflammation, vascular congestion, and edema of the nasolacrimal duct in the early phases and, ultimately, fibrosis with complete occlusion of the nasolacrimal duct's lumen in the late phases (Linberg *et al.*, 1986). The specific cause that triggers this sequence of events is not known. Nonetheless, it is reasonable to postulate that inflammation with partial ductal obstruction leads to accumulation of cellular debris, which further aggravates the ongoing inflammation and creates a vicious cycle that leads to permanent cicatrization of the nasolacrimal duct lumen. Generalized or localized stenosis of the nasolacrimal duct can result from involutional changes or occur secondary to bouts of infection, stones, topical medications, or other sources of inflammation. Flaccid canaliculus syndrome was described by Jones and Wobig (1976). Involutional changes may produce a nasolacrimal system that appears open to irrigation, but due to lid laxity and poor lacrimal pump function, will not drain tears through the system properly.

D) Neurological

The commonest neurological cause is Bell's palsy which is an acquired weakness of one side of the face, due to an injury to the facial nerve. The symptoms on the affected side typically include inability to close the eye, to smile, wrinkle the forehead and whistle. Speech may be mildly slurred. Tearing occurs because the eye does not close completely. Taste sensation may be diminished on the front half of the tongue. Sounds may appear louder on the affected side (hyperacusis) — this may be caused by paralysis of the stapedius muscle but also occurs independently. The incidence of **Bell's palsy** is 20 to 30 cases per 100,000 people per year (Hauser *et al.*, 1971); it accounts for 60 to 75 percent of all cases of unilateral facial paralysis (Adour and

Hilsinger, 1978). The sexes are affected equally. The median age at onset is 40 years, but the disease may occur at any age (Katusic *et al.*, 1968-1982). The incidence is lowest in children under 10 years old, increases from the ages of 10 to 29, remains stable at the ages of 30 to 69, and is highest in people over the age of 70. The left and right sides of the face are involved with equal frequency. Most patients recover completely, although some have permanent disfiguring facial weakness (Peitersen E, 1982). Poor prognostic factors include older age (Hauser WA, 1971), hypertension (Adour KK and Wingerd, 1974), impairment of taste (Diamant H *et al.*, 1972), pain other than in the ear, and complete facial weakness (Cawthorne T and Wilson, 1963). In the first three days, electrical studies reveal no changes in involved facial muscles, whereas a steady decline in electrical activity is often noted on days 4 to 10. When excitability is retained, 90 percent of patients recover completely; in the absence of excitability, only 20 percent of patients recover completely (Campbell EDR *et al.*, 1962, Richardson, 1963).

Other causes of acquired peripheral facial weakness are much less common. Associated conditions include diabetes mellitus, hypertension, HIV infection, Lyme disease, the Ramsay Hunt syndrome (facial **palsy** with zoster oticus caused by varicella-zoster virus), sarcoidosis, Sjögren's syndrome, parotid-nerve tumors, eclampsia, and amyloidosis. Peripheral-facial-nerve **palsy** has also been reported among recipients of inactivated intranasal influenza vaccine (Mutsch *et al.*, 2004).

Bell's palsy rarely recurs. Recurrent or bilateral facial **palsy** should prompt consideration of myasthenia gravis or lesions at the base of the brain, where the facial nerve exits the pons; such types of **palsy** occur in lymphoma, sarcoidosis, and Lyme disease (Keane, 1994). In rare cases, patients with inflammatory demyelinating polyneuropathy (the Guillain-Barré syndrome) present with bilateral facial **palsy** but relatively little weakness of the extremities however, in immunocompetent people, the Ramsay Hunt syndrome is neither recurrent nor bilateral.

E) Corneal disorders

Age-related changes in the cornea can affect the ability of the cornea both to protect the internal structure of the eye and to refract incoming light for vision.

Loss of corneal sensitivity to mechanical stimuli occurs with increasing age as the central cornea retains its sensitivity longer than other areas (Skruza, 1971). Measurement of the corneal touch threshold (CTT) in healthy people of different ages by stimulating the cornea with nylon microfilaments of various lengths indicates that the CTT remains almost the same between ages 7 and 40 years (Millidot, 1977). Beginning in the fifth decade of life, the CTT becomes significantly higher and continues to increase with age, such that by 80 years, the CTT is almost twice that of a 10-year-old (Millidot, 1977). The cause of the decline in corneal sensitivity may be attributed to the thickening of the fibrous structure of the cornea, to a decrease in water content, or to an atrophy of nerve fibers (Millidot, 1977). Moreover, Various corneal degenerations affecting the anterior surface of the cornea will cause irritation and reflex tearing.

F) Irritation from lashes

Trichiasis is a posterior misdirection of eyelashes. Owing to constant corneal irritation, it can give rise to persistent reflex tearing, discomfort, recurrent infections, corneal ulceration, and pannus formation.

In some individuals, the tarsal glands may be totally or partially absent. When this is the case, they are often replaced by an abnormal row of cilia, which invariably turn inward to abrade the cornea, a condition known as distichiasis (Dayal *et al.*, 1968). Long-standing inflammatory disease of the lid margins may result in the tarsal glands assuming such a hair-bearing function, known as acquired distichiasis. The latter condition usually does not involve all four eyelids, and the newly acquired eyelashes are usually short and nonpigmented, or they may be lie crumpled along the epithelial surface of the eyelid margin (Scheie and Albert, 1966).

G) Hypersecretion of tears

Sometimes, tears will result from hypersecretion. This can be caused by ocular inflammation, corneal irritation, gustatory tearing, thyroid problems or nasal irritation. Because of its rarity, hypersecretion is primarily a diagnosis of exclusion.

II. Management of tears in old age

A) Diagnosis

Tears in old age though not very uncommon is not a grave problem, nor does it indicate any impending permanent harm to the eye and its structures. When an elderly patient presents with complaints of excessive tearing, the possible causes are as listed above. Differential diagnosis doesn't have to be difficult, though. By paying close attention to the complaint, and following a stepwise approach, you can get to the root of the problem and manage better.

a) The history : Patients with severe dry eye typically complain of foreign body sensation, burning, itching and conjunctival redness. The symptoms will be less intense when the patient wakes up in the morning, and become worse in the afternoon or evening. Reading, wind and smoke may make the symptoms worse. Patients with very severe disease may have complaints of blurred vision, pain and photophobia. When there is no obvious infections or other outward signs to explain the symptoms, a thorough description of the problem should be obtained. Important points which suggest the diagnosis are:

- ♦ If the tears does not actually overflow the lid margins and run down the face, than excessive reflex tearing secondary to dry eyes is considered.
- ♦ If the tears overflow the lid margins and run down the face obstruction (complete or partial) of the lacrimal ducts system (drainage system) is the possible cause.
- ♦ Environmental factors like fumes, pollutants, etc. which trigger the reflex tearing should also be ruled out.
- ♦ History of any injury in the facial region should be sorted as damage to the nerves of the face may cause tear problems.
- ♦ Also, history of head or neck tumor is also important. A mass in the area of the lacrimal sac can result in partial obstruction of tear drainage.

b) The examination

- ♦ *Examination of the tear meniscus:* In aqueous deficiency, the meniscus will be minuscule or absent, and lots of debris will be present. If the lacrimal drainage system is not in working order, a much larger than normal tear meniscus will be seen. In blepharitis, there will be some froth on the tear meniscus due to excess oil in the tears. If the tear meniscus is thick and sticky, and

the lids stuck together upon waking, suspect a chronic infection secondary to a lacrimal obstruction. In such patients, some crusty deposits stuck to the lashes and in the corners of the eye.

- ♦ *Examination of the area around the lacrimal sac:* Looking for tumors in this area and palpating this area for tenderness may point towards a diagnosis.
- ♦ *Schirmer test should be performed:* This is the test to diagnose the severity of dry eyes and confirms excessive tearing.

c) Determination of the extent and location of an obstruction : If nasolacrimal system obstruction is found to be a cause than the diagnosis of the site of obstruction can be made by dye disappearance test, lacrimal irrigation, lacrimal probing, nasal endoscopy and dacryocystography.

B) Treatment for various causes of tears in old age

A) Treatment of dry eye

(a) Household remedies: Several aspects are to be considered while treating dry eye patients.

- ♦ Like controlling the humidity by using a humidifier in the living and working areas, particularly the bedroom. Ideally, the humidity should remain at 40 to 50 percent.
- ♦ Four drops of preservative free artificial tears in each eye every day.
- ♦ Reduction or discontinuation of systemic drugs for allergies, insomnia and nervous disorders.
- ♦ As in mild dry eye good lid hygiene should be advised.
- ♦ As suggested by MacKeen *et al.* (1996), washing the faces with a Turkish face cloth twice a day, followed by a 30-second warm tap-water compress using a face cloth over both closed eyelids, also benefits such patients. After the warm (as opposed to hot) tap-water compress, the lower lid margin of each eye should be wiped once with a tightly wound dry cotton-tipped applicator. The heat and mild friction created with a single wipe from side to side removes excess oils, mucous and debris from the lower lid margin (MacKeen *et al.*, 1996). Also, this will draw reflex tearing from the lacrimal gland, if it's available. Even a small amount of reflex tearing will decrease the need for artificial tear solutions.

- ♦ Moist chamber spectacles (Hart *et al.*, 1997) can also be considered when patient compliance is not a problem.

(b) *Tear Replacement Therapy* : The replacement of newly identified tear components to maintain tear-film stability on the ocular surface represents an important innovation. An eye drop with low osmolality, in turn, inverts the osmotic gradient between the tear film and the ocular surface. By lowering tear-film osmolality and reversing the gradient, these substitutes rehydrate the dehydrated tissue and don't pull water out of the surface of the eye (Gilbard, 2000).

Many of the new substitutes are preservative-free and contain viscoelastic materials (hypromellose, methyl cellulose, etc.) targeting the role of mucin on tear-film. These newly formulated drops allow adsorption to the ocular surface, increasing retention time. Further, preservatives are known to alter the normal electrolyte balance of the tear film and eliminating them will be not disturb this electrolyte balance.

(c) *Interventional therapies*:

- ♦ Blocking the puncta with silicone plugs. If these plugs fall out more than once, suturing the punctum closed with 10-0 nylon is recommended.
- ♦ Lid tarsorrhaphies can be opted when there is a threat of impending corneal damage due to dry eye secondary to neurological causes.

(d) *Challenges of Future Therapies* : As the number of available treatment strategies for dry-eye and ocular-surface disorders increases, it's becoming difficult to determine the potential value of a therapeutic approach. Additionally, the diagnostic tests to evaluate success must be more accurate. Additional tear components being evaluated as tear substitutes include lactoferrin, a protein secreted by the lacrimal glands; lipocalin, a lipid binding protein; and waxes. Additionally, researchers have identified two components of meibomian gland secretion, phosphatidylethanolamine and sphingomyelin, that are decreased in obstructive meibomian gland dysfunction. Replacing these lipids may lead to increased stability of the lipid layer, minimizing evaporative tear loss. New tools such as fluorophotometry, confocal microscopy and lactoferrin analysis may assist researchers in understanding what's being measured and determining normative values for a population. Furthermore, the formulation of topical agents

that address tear-film deficiencies, stimulate secretory processes or suppress inflammatory activities may result in products with multiple active ingredients.

B) Eyelid abnormalities

Punctal ectropion can be corrected by horizontal eyelid tightening procedures (viz. lateral tarsal strip procedure, blepheroplasties, transconjunctival tightening and rotation procedures, etc). These tightening procedures restore adequate horizontal tension to the lower eyelid and often correct any punctal ectropion. All these procedure are used in combination also.

C) Nasolacrimal drainage system pathology

(a) *For punctal stenosis*: Wide dilatation, punctoplasty (viz.. one snip procedure) and silicone tube implantation are advocated.

(b) *For canalilculitis*: After a cytological examination or a high-resolution ultrasonic examination, curettage and debridement through the dilated punctum followed by antibiotic lavage is performed. Large diverticuli are excised or marsupialized.

(c) *For Nasolacrimal duct blocks*: Dacryocystorhinostomy (DCR) is the treatment in which a passage is created surgically between the nasal cavity and the lacrimal sac.

D) Neurological causes

If there are no central neurological lesions with facial palsy and no apparent cause (**Bell's palsy**), and is diagnosed within one week after the onset of symptoms, than no tests are indicated unless other cranial-nerve deficits develop (indicating more widespread disease). If there is no recovery three to six weeks after the onset of symptoms, or a facial twitch or spasm preceded **Bell's palsy** than that indicates continuous facial-nerve irritation suggestive of a tumor. Short course of Steriids (prednisone) within 2 to 14 days after the onset of symptoms is the treatment of choice. Because **Bell's palsy** is associated with HSV infection, antiviral treatment may help. If complete facial paralysis is still present after one week of medical treatment, electroneurography should be performed. If electroneurography documents 90% nerve degeneration, than surgical decompression may be considered. Finally, for patients with

permanent facial paralysis, various surgical procedures exist for dynamic reconstruction of the facial nerve.

E) Corneal disorders

If there is corneal insensitivity due to neurological cause than the treatment should be as described above. In mild loss of sensitivity lubricating tear supplements are the preferred mode of therapy.

E) Irritation from lashes

For trichiasis several modalities of treatment exist which include epilation, electrolysis, cryotherapy, argon laser thermoablation (Bartley and Lowry 1992; Sahni and Clark 2001; Sharif *et al.*, 1991; Ghabrial and Francis 1994) and full thickness pentagonal resection with primary closure (may be considered with the trichiasis confirmed to a segment of the eyelid only).

Management of distichiasis is difficult and often unsuccessful. In localized cases, a wedge resection with primary closure may be effective. Cryotherapy can be used after splitting the posterior lamella. The excised area may be replaced with full-thickness mucous membrane grafts.

III. ___Recent advances

Tear-film dysfunctions, collectively diagnosed as dry-eye syndromes, are classified into two major types: aqueous-deficient and evaporative (Lemp, 1995).

Aqueous-deficient dry eye is due to a lack of tear secretion from the lacrimal gland. An example is Sjögren's syndrome, an autoimmune disease. The disease is associated with an extensive inflammation in lacrimal tissue, an immune-mediated destruction and/or dysfunction of epithelial cells, and a precipitous decrease in aqueous tear output (Sullivan *et al.*, 2002). Sjögren's syndrome may be either primary (i.e., no associated connective tissue disease) or secondary (e.g., patients with systemic lupus erythematosus or rheumatoid arthritis). Evaporative dry eye is typically caused by meibomian gland dysfunction and lipid insufficiency, leading to increased evaporation and reduced stability of the tear film (Sullivan *et al.*, 2002). It's estimated that meibomian gland disease, which also occurs in Sjögren's syndrome, may be a contributing factor in more than 60 percent of all dry-eye cases (Shimazaki *et al.*, 1995).

The majority of dry-eye sufferers are women, and female gender has been identified as a risk factor for dry-eye development (Schaumberg *et al.*, 2001; Caffery *et al.*, 1996). This sex-related prevalence is not surprising, given that more than 90 percent of the individuals with primary or secondary Sjögren's syndrome are women, and that these autoimmune disorders are among the most frequent causes of aqueous-deficient dry eye.

Numerous published studies document that sex and sex steroids exert a significant impact on the health and well-being of the eye (Gupta *et al.*, 2005). Sex-associated differences have been identified in the lacrimal gland, meibomian gland, conjunctiva, goblet cells, cornea, anterior chamber, iris, ciliary body, lens, vitreous and retina. Many of these differences appear to be due, in part, to the action of sex steroid hormones (i.e., androgens, estrogens and progestins).

The recognition of these sex-related differences, and the determination of their underlying basis (e.g., sex steroid action), is extremely important. Such understanding may lead to new insights into the physiological control of ocular tissues, as well as the development of novel therapeutic strategies to treat diverse eye disorders.

Androgens are known to regulate structure and function of lacrimal tissue in a variety of species. Androgen receptors are located almost exclusively in nuclei of epithelial cells and the density of androgen receptors is far higher in males, as compared to females. The distribution of the androgen binding sites in lacrimal tissues is under the influence of gender and endocrine system (Rocha *et al.*, 1993).

Androgen receptors has been reported to be present in the meibomian gland of human, rat and rabbit (Auw-Haedrich and Feltgen, 2003; Rocha *et al.*, 2000; Wickham *et al.*, 2000). The meibomian gland is also a target organ for androgen (Sullivan *et al.*, 2000). Production of fatty acid, total and neutral lipids in the meibomian gland is regulated by the hormone action. The changes in lipid contents affect the stability of the tear. Chronic androgen deficiency is associated with meibomian gland dysfunction, which results in dry eye, a common disease both in males and females. The onset of dry eye is very common during menopause and may result from the loss of hormonal support. In human tear production is correlated with serum prolactin and Sex Steroids Hormones levels

prior to and during menopause (Mathers *et al.*, 1998). Androgen has been shown to elevate a secretory activity of production of the tears in the lacrimal gland of rats (Sullivan and Allansmith, 1987; Sullivan *et al.*, 1990). Estrogens may or may not be inhibitory to the androgen effect (Varma *et al.*, 1994). Lacrimal fluid peroxidase has cyclic variation during the menstrual cycle (Madia *et al.*, 2001). Thus an altered hormonal balance at menopause may affect tear production. Recently it has been shown that premature ovarian failure women show more symptoms of dry eye than age matched controls (Smith *et al.*, 2004). These ongoing researches may lead to a discovery of new specific modalities for tears related problems.

IV. Conclusion

In summary, like many other geriatric problems, “Tears in old age” are not very uncommon. It has a diverse etiology with varied treatment modalities. Dry eyes remains to be the major concern for the geriatric population. Meticulous diagnosis is required for better management of “Tears in old age”. The knowledge of influence of sex hormones on the etiology of these tears in old age has opened new avenues for researchers, to find out specific treatment measures. Probably in future there may be no “Tears in Old Age”!

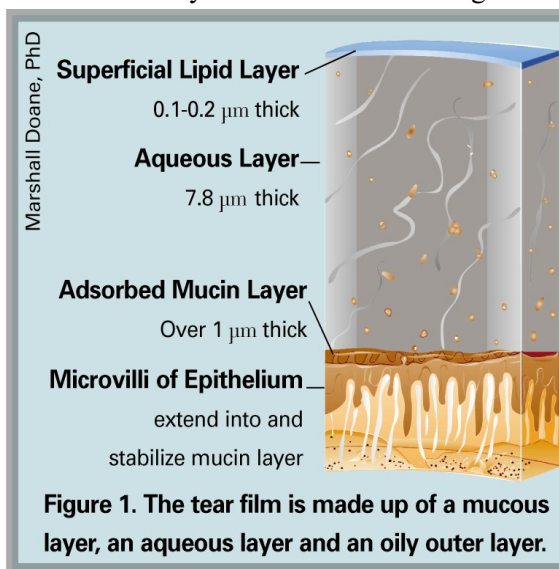


Figure 1. The tear film is made up of a mucous layer, an aqueous layer and an oily outer layer.

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Aging and Sleep Disorders

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ABSTRACT

Aging is characterized by progressive decline in all physiological functions. The elderly people generally get disturbed sleep. Most common sleep disorders in elderly are Sleep apnea, Nocturnal myoclonus and Advanced sleep phase syndrome (ASPS) etc. The decline in physiological functions could be due to malfunctioning of Central Nervous System (CNS) and may involve neuronal and synaptic loss of function and decrease in the concentration of various neurotransmitters. Various nervous disorders that appear in elderly persons due to change in neurotransmitter levels such as Parkinson's disease, Alzheimer's disease, senile dementia, stroke etc. can also lead to altered sleep patterns. The age-related sleep disturbances have been attributed to disturbances of circadian function due to failure of the pineal gland to produce neurohormone melatonin from neurotransmitter serotonin. Melatonin appears to play a key role in regulating the body's circadian rhythms to regulate the timing and quality of sleep.

Key words : Aging, sleep disorders, Melatonin

Aging is associated with a progressive decline in all physiological functions. It results in decreased amount and quality of sleep in about 40% of elderly people. Sleep disorders have been considered to be major symptoms and problems of aging which in turn may cause disruption in other functions such as digestion, mood, fatigue and decrease in alertness etc. Sleep disturbances in older adults are often overlooked but can have a significant negative impact on daily functioning and quality of life. These changes may lead to changes in basic homeostatic processes with age.

Altered sleep patterns with Aging

One of the most common features of aging is impairment in the quality of sleep. The elderly people generally get disturbed sleep and take longer time to fall asleep, awaken more frequently during the night and for longer periods of time, and have less efficient sleep. Often there is a phase advance in timing of sleep. They tend to go to sleep earlier than younger people, awaken earlier and nap more during the day time and thus the altered patterns of sleep (Miles and Dement 1980 and Lieberman *et al.*, 1989).

The sleep is inhomogeneous characterized by two behaviorally and physiologically distinct phases. First phase is characterized by rapid eye movements (REM sleep); while later phase involves no rapid eye movements (non-REM sleep-NREM sleep) i.e. deep or slow-wave sleep. Within NREM there are four stages, ranging from stage 1 (the lightest level) to stage 3 and 4 i.e. deep or slow-wave sleep. The structure of sleep in elderly as shown by encephalographic recordings, differs as compared to their younger counterparts. NREM sleep accounts for about 80% sleeptime and REM for approximately 20%. The distribution of sleep stages throughout the night changes with age. The most prominent changes are reduction in deep or slow-wave sleep. In addition there is increased awakenings, a decreased latency of the first REM sleep episode, and a uniform distribution of REM sleep during night (Dijk and Lockley, 2000). Age related increases in day time napping and fatigue and a decrease in nocturnal sleep can be related to a number of factors such as nocturia, elevated autonomic activity, medical illness and sleep disorders. It is not yet understood if there is a change in sleep need with age. Much of the disturbed sleep patterns seen in older adults may reflect pathological sleep disturbance (Figure 1 and 2). There are several causes of sleep disturbance found in older adults. These can be classified as circadian rhythm disturbances, sleep apnea related with sleep disordered breathing (SDB), nocturnal myoclonus (periodic limb movements in sleep (PLMS), REM behaviour disorder (RBD), sleep disturbance associated with dementia, and sleep disturbance secondary to medical illness and medications and advanced sleep phase syndrome (ASPS) characterized by evening sleepiness and early onset of sleep and early morning awakening, (Bliwise, 1999).

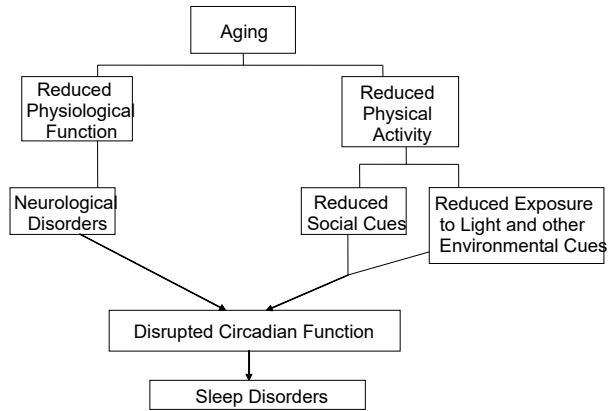


Fig. 1: Flow diagram showing interaction of decline in physiological functions and other factors such as reduced social cues and reduced exposure to light and other environmental factors upon aging, thus leading to disruption of circadian function, resulting in sleep disorders.

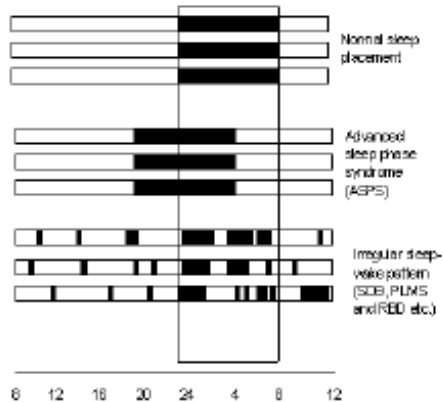


Fig. 2 : Schematic diagram depicting various sleep disorders associated with disturbances of the circadian system. The open bars represent intervals during which wakefulness typically occurs, black bars correspond to usual sleep times in normal and pathological conditions and vertical rectangle represents desired sleep time. Individuals with Advanced sleep phase syndrome (ASPS) sleep at earlier than desired time whereas individuals with irregular sleep-wake patterns such as sleep disordered breathing (SDB), periodic leg movements in sleep (PLMS) and rapid eye movement (REM) behavior disorder (RBD) etc. may have disturbed sleep at other than desired times also.

Alterations in Circadian Rhythms with Aging

The sleep disturbances in elderly have been attributed to disturbances of circadian function (Lieberman *et al.*, 1989). The circadian pacemaker “regulates the timing of sleep within the 24 h day”. It has been shown that age-related changes in the circadian pacemaker lead to sleep disturbances in older adults (Figure 1 and 2). In addition, aging is associated with changes in several basic parameters of circadian rhythms in mammals, including changes in period length under free running conditions, amplitude and the phase angle of entrainment to the light-dark cycle (Van Gool and Mirmiran, 1986; Morin, 1999 and Zee *et al.*, 1992). Many workers have reported that the output of the circadian pacemaker decreases with age. This decrease is a major cause in sleep problems in older adults and is most likely the result of deterioration of the hypothalamic nuclei with age. In addition, the response of the circadian clock to both photic and non-photic stimuli is altered in advanced age (Rosenberg *et al.*, 1991 and Van Reeth *et al.*, 1993). Thus the circadian disorder of aging would largely be a reflection of altered pacemaker function. Such variations may lead to various behavioral changes.

Extensive physiological and behavioral studies have indicated that the circadian pacemaker, the endogenous clock is characterized by a cycle approximately of 24 hr in duration. Such clocks have been localized to discrete sites in central nervous system (CNS) and, in mammals, to the bilaterally paired Suprachiasmatic nucleus (SCN) in hypothalamus (Klein *et al.*, 1991 and Jagota *et al.*, 2000). The SCN regulates the production and discharge of melatonin (hormonal message for darkness) from pineal gland via a multisynaptic pathway, such that melatonin levels are high at night and low during the day (Welsh *et al.*, 1995 and Jagota *et al.*, 1999). The SCN is known to deteriorate with age thus producing disruptions in the circadian rhythms resulting in decline in efficacy of input and output pathways from SCN (Kolker and Turek, 2001). With increasing age reduction in the number of neurons (Swaab *et al.*, 1985) and neuronal degeneration in SCN (Mirmiran *et al.*, 1992) have been reported. It has been reported that circadian rhythms in firing patterns of SCN neurons upon aging become aperiodic and flattened (Satinoff *et al.*, 1993).

In addition to endogenous generation of circadian rhythms, external cues or zeitgebers provide entrainment signals, of which most

prominent is light that maintain appropriate timing of circadian rhythm. Older adults often lack sufficient zeitgebers for proper entrainment, such as exposure to bright light, regular social interaction, and physical activity. The deterioration of the endogenous pacemaker combined with weak external cues can produce disruptions in daily rhythms. Age related decrease in amplitude of many physiological rhythms such as body temperature, cortisol release, testosterone, thyroid stimulating hormone, cortisol and melatonin etc. have been reported (Van Coevorden *et al.*, 1991 and Bilwise, 1999).

Key role of Melatonin in Age related sleep disorders

The relationship between the pineal gland and aging has been assumed already nearly a century ago. It has been proposed that aging occurs because of failure of the pineal gland to produce melatonin from serotonin. This leads to night time deficiency of melatonin both absolutely and also relatively to serotonin and also decrease in number of pinealocytes (Pazo *et al.*, 2002). As melatonin has widespread integrative and regenerative effects, the reduced melatonin may lead to disturbances normally associated with aging. There are evidences for melatonin and serotonin in controlling neuroendocrine and immune networks and inhibiting development of ischemic heart and Alzheimer's disease, tumor formation and other degenerative processes associated with aging. Melatonin deficiency especially in relation to serotonin may be responsible for the promotion of aging in the organism (Grad and Rozenzweig, 1993).

Oral administration of melatonin may also be effective for shifting circadian rhythms, although the findings are mixed and therapeutic recommendations can not be made currently. But melatonin has received a great deal of publicity as to its effectiveness in improving sleep. It is available commercially and dramatically improves sleep. Melatonin works with the body's circadian rhythms to regulate the timing and quality of sleep. Recently, melatonin was considered by some authors as a "wonder drug." The antioxidant effect of melatonin might explain its lifespan-prolonging effect, at least to a certain degree (Vitiello 1997).

Changes in Central Nervous System with Aging

A variety of physiological functions have been shown to decline with aging (Shock, 1957). This decline in physiological functions are

associated with malfunctioning of the various autonomic systems in the body, like Central Nervous System (CNS) in which aging causes a diminished function accompanied by changes in various neurotransmitter levels. Aging also involves neuronal and synaptic loss of function which depends on adaptations in cellular responsiveness (Slotkin *et al.*, 2005). The age-related decline of pineal melatonin production is due to the degenerative changes of the neural structures (serotonergic and noradrenergic neuron systems) innervating the pineal gland and the suprachiasmatic nuclei rather than to the degeneration of the pineal tissue itself.

Disturbed sleep associated with Age related Neurological disorders

Sleep problems can also be the result of certain psychological disorders such as depression, anxiety disorder, or obsessive compulsive disorder. Unfortunately, in order for the treatment to be applied, the cause of the sleep problems must be identified.

It has been reported that aging causes a decrease in the concentration of various neurotransmitters (Sparks *et al.*, 1985 and Meek *et al.*, 1997). There are number of nervous disorders which more commonly appear in elderly persons such as Parkinson's disease, Alzheimer's disease, senile dementia and stroke and depression etc. (Table1). Alterations in the concentration of serotonin can produce behavioral abnormalities such as aggression, insomnia, suicidal or criminal behavior, loss of sex drive, despair and misery often observed in elderly individuals (Frazer and Hensler, 1994). Reduction of serotonin levels with aging may serve as susceptibility factor in the development of late life depression (Lerer *et al.*, 1995). The prevalence of major depression is estimated at 1-10% in population 'in age of 60 years old whereas sleep is also affected by diseases which become more prevalent as age increases such as dementia persistent upto 20% in the elderly population. Further more suicidal rate in this age group is higher than any other stages of life (Casey, 1994). A strong correlation between age related disorders and serotonin neurotransmitter concentration exists according to the studies that have reported reduced neurotransmitter levels (serotonin) associated with aging (Brizee, 1975). Very little information is available on the mechanism of age related changes in serotonin levels. The possible reason for decreased serotonin levels could be due to diminished activity of anabolic enzymes or enhanced activity of catabolic

enzymes. Transport of tryptophan was reported to decline in old rats (Tang and Melethil, 1995). But, it has been shown that if diseases, pain, or life stressors are controlled, then sleep problems decrease dramatically. Sleep disorders, however, can affect sleep quality. The most common sleep disorders associated with neurological disorders frequently reported in elderly are advanced sleep syndrome (ASPS) characterized by evening sleepiness and early onset of sleep and early morning awakening, sleep apnea (impaired breathing during sleep) and nocturnal myoclonus (leg movement during sleep) (Cermakian and Boivin, 2003).

Table 1: Age-related neurological disorders

Name of Neurological Disorder	% Occurrence	Age (Years)
Parkinson's disease	1	>65
Alzheimer's disease	520	>60>80
Dementia	20	>70
Stroke	12	>65
Depression	1-10	65

The lack of circadian rhythmicity can be the result of also the environments in which institutionalized Alzheimer's patients live. An environment devoid of zeitgebers can lead to desynchronization of circadian rhythms. The bright light has been shown to be an effective means of shifting circadian rhythms and can be employed for the treatment of ASPS. Specific medications have been found to help in these disorders. Dopaminergic agents decrease the number of leg kicks and arousals, benzodiazepins reduce arousal and opiates reduce the number of leg kicks.

Sedatives

The elderly people use more medications to help them fall asleep than other age groups. Sedatives are often prescribed for older adults facing sleep problems. Dependence on these sedatives can impair cognitive functioning, slowed motor movements. All these problems lead to altered sleep patterns (Schweitzer, 2000).

Conclusion

Increased sleep disturbances in the elderly due to various physiological changes have been well documented. Disturbances are

primarily due to age-related deterioration of circadian rhythms and secondarily due to physical illness and as a side effect of medications. Melatonin has been considered to play a key role in effectively improving sleep. It is available commercially and dramatically improves sleep. Many treatments also exist to help the elderly sleep better. Unfortunately, in order for the treatment to be applied, the underlying cause of the sleep problems must be identified. Lot of research work needs to be done as side effect of melatonin if any are not yet understood.

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The Added Value of a Qualitative Approach Towards the Study of Seniors' Social Lives

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ABSTRACT

In 2003-2004, the author has researched several aspects of the social lives of senior women in Kerala (India). Particular attention was given to their household co-members, family ties, friendships and neighbours. The researched population group consisted of English speaking - and therefore relatively well off - senior women in Kerala's capital city of Thiruvananthapuram. Although not an "average" population group, the results show how a qualitative approach towards the social aspects of ageing may have several important benefits. It is therefore important that more qualitative studies should be performed for the research of all groups of elderly; in addition to the already often performed quantitative studies. Not only will this result in a more complete understanding of seniors' social lives, it may also help to further refine quantitative measures of data-gathering and correct certain hidden assumptions behind many studies on ageing.

Keywords : Social aspects of ageing, Qualitative and Quantitative research methods, Kerala.

Most research done on the subject of elderly and ageing, in India and abroad, is done from a quantitative point of view. To put it simply, quantitative research is research of which the results are formulated in numbers; in qualitative research this is not the case. This basic difference has several far-reaching consequences for the nature of the two types of research. Quantitative social research will usually cover a very large population sample. This makes it inevitable that the processes of data gathering and analysis are usually performed by a team of (different) researchers. Because all answers to questions will have to be quantified, the questions are simple in nature and allow a limited number of short answers. Qualitative research on the other

hand usually covers a small population group. Since the interviews and observations done are not as structured as quantitative surveys they are in general far more time-consuming. The researcher and analyst are mostly one and the same person and since answers do not need to be summarised in numbers, the questions asked and the answers given can be more complex. Naturally, these two different approaches both have their strong and weak points and should ideally function cooperatively. In the following paragraphs I will try to explain what issues are left untouched when the quantitative dimensions of ageing are overemphasised and will thereby elaborate on the added value of qualitative research methods in the field of ageing studies.

“It’s my knee that makes me old”

In quantitative studies, the researcher (or at least the data-gatherer) is the one who decides not only on the topic and the focus of the study but also on the possible answers that respondents are allowed to give. Since fixed categories are necessary for any quantitative data analysis, the respondents can only be offered a limited number of options and possibilities. Putting it bluntly, this means that it is the researcher herself who decides how the options may be expressed and measured.

In the area of elderly studies this comes most directly to the fore with the chosen definition of ‘old’. As Cohen puts it, the definition of ‘old’ is used as a “generalized way of marking and signifying someone whose body, demeanor, behavior, social position, or history is suggestive of the later decades of the life course in a given place or time” (Cohen, 1998: 33). This makes it a very subjective term that is difficult to pinpoint. However, statistical and comparative purposes in quantitative studies make the usage of numerical age categories nevertheless indispensable. For these purposes, the researcher will choose an arbitrary cut-of point, such as 55 or 60, above which age people will automatically be defined as ‘old’. Therewith the researcher inevitably neglects the respondents’ own thoughts and feelings on the matter.

It is because of the above mentioned problem, that some researchers have chosen to use emic definitions instead: categorising those people as ‘old’ who are described as such by themselves and others in their surroundings (*see* Lamb, 2000; Vatuk, 1980)¹. Although even an ‘emic’ approach will always be influenced by the researcher’s

own persona, it leaves more room for the elderly respondents. Giving them the opportunity to express what are the most important aspects of ageing to them. Also, for lack of any fixed answer categories, seniors can be allowed to formulate their own ideas and thoughts much more exactly.

When asking senior women in Thiruvananthapuram whether they did or did not consider themselves 'old', the answers became a clear indication of what characteristics people apparently attribute to the status of 'old'. Interestingly, a definition of 'old' based on the number of years lived was definitely not the most often heard emic description forwarded by my respondents. Some respondents who were older than 60 simply refused to carry the label 'old'. To them being 'old' was synonymous to being 'inactive'. Others made a distinction between several different aspects of growing old, defining 'old' as a full package of ageing mentally, physically and in years. Since these processes of ageing do not always proceed at the same speed, these respondents conclusively only consider 'old', those people who have aged in all areas mentioned. Finally, it is interesting to see that those who accepted the term 'old' did so for very different reasons. One of the repeated reasons mentioned during the interviews corresponds closely to a point established by Lamb and Vatuk. These researchers both pointed out that the marriage of one's son or daughter and the birth of grandchildren may mark the start of old age much more clearly than the passing of another calendar year (Lamb, 2000:43-45; Vatuk, 1980:138-140). "And while physical signs of ageing- like greying of the hair, loss of teeth, and cessation of menstruation, for example- are of course recognized and provide visible markers of the passage of years, transitions related to the developmental cycle of the family are much more important in defining the major periods of a woman's life" (Vatuk, 1995:293). In my respondents' words this would simply mean that: "When grandchildren come, you feel you've become old", as a 62-year old grandmother of two explained.

Apart from the birth of grandchildren or the marriage of children, retirement was also indicated as an important event indicating seniority. Lata², a female retired auditor, also experienced her retirement as a defining moment and stated that she had felt 'senior' ever since that day. Apart from her retirement, she also saw 'experience' in general as something that made people 'aged' and

‘senior’. With a sense of pride she told me how she likes saying she is senior: “It is because of all the experience. I brought up my children very well and 69 is a good age. At this age there are so many things that we have seen and difficulties that we have had”.

Finally there were those, whose physical situation had made them ‘old’, whether or not they were happy with the term. In ‘India’s Elderly: Burden or Challenge’, the authors find that: “[m]ost of the elderly who participated in the discussion are still working and are against the chronological definition of 60 years as the cutoff point for defining the elderly. [...] They seem to believe that declining health status as well as restrictive activity pattern should be the criterion for defining elderly³” (Irudaya Rajan, Mishra & Sankara Sarma, 1999: 268-270). It is Annie (69) who used this definition the most literally when she said: “It is not so much age that is a problem. It is my knee that makes me old. That really is a problem; the rheumatics in my knee make it very difficult to walk. It makes me slow. I have to ask for help for many things I would like to do by my self”.

Quantitative researchers would be right in saying that it is simply impossible to take these subtleties into account when they want to compare large numbers of elderly. However, it is these very subtleties that make up the experiences of ‘ageing’ to the ones concerned. Also, data on the associations people have with ‘growing old’ can teach us which characteristics elderly in a certain population group attribute to being ‘old’. These in turn can enlighten us on the great cultural diversity in attitudes and feelings towards ageing and the category of aged in different countries and societies⁴. In my own research sample for instance, it is interesting to see that apart from ‘health’, all other characteristics stand in a positive relationship with ‘old’. Meaning that whereas health is seen to diminish with growing older, experience and grandchildren are both seen as very positive elements. Comparing this data with similar data from a much poorer population group for instance, would give us important information on how various cultural, economic, religious or social backgrounds colour the different experiences of ageing.

I’m not living with them; they’re living with me

Researchers studying the social lives of elderly in India have a great common interest in the household compositions of elderly. This is a very logical interest because those with whom we live tend to

make up an important part of our social life. It is also a very convenient interest since every ten year researchers in India get a new bulk of data on household compositions from a new nationwide census. There are however certain problems that are likely to arise as a result of this great interest in household matters only, let me discuss three possible pitfalls.

First, when trying to make as much use as possible of the easily available data on some aspects of the household life of seniors, quantitative researchers have a tendency to attach too much importance to the numerical dimensions while ignoring other dimensions of household-life that are less easily quantifiable. For example, what quantitative studies like no others can tell us are matters like: with how many children does the average senior live. Or, do elderly women live alone more often than elderly men. However, what this 'living with' actually consists of and how this is perceived by the senior and her housemates is not easily measured in numbers and therefore receives little attention. As an example, 70 year old Yasmin clearly indicated the all important differences between staying with your children, and having your children stay with you: "The children have always lived with me. That is very different from me living with my children. This was my house and the children were free to stay with me. But staying with the children is very different, definitely."

The important nuance that Yasmin points out, is something that doesn't appear from quantitative studies. It shows that Sen (1993) was correct in describing the household as a remarkable and complex institution. He explains how economists have often ignored the household in their analysis or have used oversimplifications that lack all resemblance with reality. For a correct understanding, it is important to recognise the inequalities that exist within the household and to see its economics as a bargaining problem with cooperative conflicts.

Asking for one 'head of the household'⁵ is one often-used way of ignoring these complexities that Sen warns us about. My study shows that there are several different aspects that greatly influence the intricate power relations within a house⁶. For the interviewed senior women in Thiruvananthapuram, the most empowering issue turned out to be the house's ownership. In Kerala, it is quite possible for elderly

ladies to be living in a house that they have themselves inherited from their parents because of the once prevailing matrilineal system of inheritance among large groups of the population⁷. This naturally gives the houses a lot of personal history and emotional value and makes their ownership more than only a financial matter. Apart from house ownership however, it also seemed to matter who had been the first to live in the house and who had constructed or made adjustments to the house.

However, house ownership and personal history in the house are not the only authority giving aspects. Even in old family mansions where respondents have lived all through their lives, roles can be reversed and elderly respondents can suddenly find themselves 'living with their children'. Having focussed on women in particular I would say that the defining moment that effectuates this transfer of authority for most senior women would be the moment in which the household duties are slowly or abruptly taken over by the younger generation. One 87 year old respondent, Premila, put some of the frustrations and pain into words that can accompany this process, when she said: "I don't have any work to do. They are not making me do anything. They want me to sit still and be quiet. I want to be with God. I can't do anything here".

Those senior women who were on the other hand 'still' responsible for their household duties would tell me proudly and explicitly. Like 78-year Vijaya who lived with her daughter and son-in-law and who told me about her daily routine: "At 5.45 I wake up and help in the kitchen, I prepare the coffee for the entire family. Tell the cook what to prepare. The house is still managed by me, not by my daughter. I am the one who decides what to purchase and what to cook". This shows us how important physical and psychological well-being is for the sense of authority of the elderly women. Keeping a close watch on what goes on in the household and protection of the established authority is necessary to maintain control. This is of course only possible if the senior lady herself is fit in body and mind. However, it is clear that having domestic staff will allow her to continue with her tasks a lot longer than the poorer elderly woman who has to depend more on her own physical abilities.

Second, in an attempt to quantify all aspects of the household life, complexities often get lost and a static and over simplistic new 'truth'

is created. Censuses and large quantitative surveys will provide us with 'still photograph' information on a situation at a particular time and place⁸. Qualitative methods to the contrary are usually better equipped to find out about unknown processes, since they have a more open and dynamic 'rolling camera' approach⁹⁹ However, once these processes are known, quantitative methods can be perfectly suitable for further study.

For instance, it is through this approach that we can have learned more about the phenomenon of 'travelling grannies' as Risseuw (2005) has appropriately called elderly women's frequent shifting from one household to another. Although her analysis considers elderly in Sri Lanka my findings in Thiruvananthapuram show great resemblance.

Interestingly, the researched seniors (both men and women) showed a great tendency to go from one relative to another, staying at different places for several months on end. Specific about Kerala is its large out-migration of the young working population to different states and countries. One of the most recent and precise estimations assesses the total number of emigrants from Kerala to be approximately 1,363 million and was made about the second half of 1998 (Zachariah, Mathew & Irudaya Rajan, 1999). Although most migration from Kerala is to the Gulf and only temporary; the children of the richer elderly I interviewed have a tendency to go to other Indian states or 'the West' and remain there indefinitely. With them, as with the children who remain in Kerala, their senior parents regularly go and stay for some months. Showing, as Risseuw (2005) points out, that to the seniors concerned, relations seem more important than localities.

The third point I would like to make here, is again connected to the easy availability of quantitative data on household and family members. Because of the quantifiable nature of these two groups of people, other important actors in the social lives of elderly run the risk of not getting any attention. Still, especially in a setting like Kerala's where so many of the children have moved (far) away, there are other people that may greatly influence the daily lives of seniors. Friends, neighbours, co-members of social associations and 'servants' all greatly influence the lives of the seniors I researched in Thiruvananthapuram. To a large extend, it is on these people that elderly depend for their daily chat, some help with shopping or even

an emergency ride to the hospital. Numerous were the times people told me 'friends are better than family'. Excluding them from studies, for the simple reason that they are more difficult to count is therefore not a valid excuse.

"Don't write, listen!"

Next to the above mentioned reasons, it is the specific nature of the population group that makes qualitative research also very desirable. In most cases of elderly studies the researcher will be younger than the seniors studied. This age-difference is important to take into account since it will always shape the answers given; whether it is in a quantitative survey, or in a more open-ended qualitative interview. In many cultural settings when the respondents are (much) older than the interviewer, the seniors will be much more appreciative of a conversation-like interview in which they feel they have the power to change the subject or give additional information on things they find important than they will be of a fixed questionnaire with little flexibility. Simple logic has it that when informants feel happy about an interview they tend to be more truthful and open in their answers. The importance and consequences of this simple truth are very often underestimated. Frequent were the times when respondents would tell me: "Don't write, listen!", after which they would often give me the most important and sensitive information¹⁰.

The point made is equally true for those elderly who suffer from a form of memory loss or a short attention span. A qualitative research with 'deep' interviews will give them more autonomy, as it does not repeatedly asks questions that may be difficult to answer and also allows for the possibility of a follow-up visit. If for instance the topic of children is being discussed, repeatedly asking for the correct age of the children and their exact whereabouts may become a frustrating thing to someone who doesn't exactly remember. However, that very same person may have other, equally valuable information to share that will be left untouched in a fixed quantitative questionnaire, such as how that person feels about her relationship with her children, whether she likes seeing them and whether she feels appreciated. One may argue that questioning someone with memory loss will give distorted answers that should not be included in a study. In this respect I would like to make two points. 1) This specific population group is just as much part of the larger group of elderly as all others, which

makes their situation similarly important to study. 2) These very answers are also included in large-scale quantitative studies, where (unlike in most qualitative studies where data-gathering and analysis are usually done by the same person) the final analyst is often unaware of the respondents mental state and will therefore not be able to interpret the data accordingly.

A careful approach

Although often neglected, most quantitative measures are based on certain strong suppositions on the workings of our social world. Although seldom elaborated upon, quantitative research is as biased as any other type of social research. However, while qualitative researchers usually write extensively about their difficulties to remain value-free, quantitative researchers do not feel that much need to do so, or only mention them in a remote footnote. Also, since (as said above) the quantitative researcher mostly uses data made available by others, she may not feel the need to study the ways in which that particular data has been extracted. As a result the data is presented in a neutral way and the suppositions that underlie it are hidden behind numbers. In this respect qualitative methods can be ideal for an investigation of some of these 'hidden assumptions'.

One such a 'hidden assumption' behind many quantitative approaches that has influenced attitudes towards elderly worldwide is their overall assumed dependency on younger people, usually their children. Schröder-Butterfill described this assumption as follows: "Most research on ageing in developing countries has focused on support provided by adult children to elderly parents. Underlying this approach is the mute assumption that elderly people are in need of support as a matter of course. Population ageing therefore represents a challenge, if not outright problem, to families and societies" (Schröder-Butterfill, 2002).

There are several problems with this dependency-approach : 1) it neglects the variety within the elderly population, problematises them and takes away their autonomy, 2) it falsely assumes that the elderly as a group have no support to offer and 3) it ignores the important support giving and support receiving relationships the elderly may have with people from outside of their direct family. Now, I will continue with a closer look at a few forms of care-relationships that

elderly may be in and suggest a different 'interdependency'-approach that will do more justice to the elderly's reality.

There are several different forms of practical care and support that are important to distinguish when one aspires to obtain a complete picture of the care-relationships that elderly have. However, because of space constraint, I will here only discuss two most easily visible forms of support, that are often discussed in studies on seniors: residential and economic support¹¹. Still, when we discuss these two forms, let us not forget the other equally important forms of support that elderly can give and receive, such as: emotional support, advice and direct physical aid.

First let us look at residential support. "A lot of research on ageing in Asia takes coresidence with an adult child to be indicative of upward flows of intergenerational support (*sic.*)" (Schröder-Butterfill, 2002). However, we have already seen above how much more complex the diverse relationships under one roof can be. Irudaya Rajan and Sanjay Kumar write: "Though co-residence is an important criterion for the well-being of the elderly, it may not always ensure a healthy relationship between the successive generations. The economic, emotional, and social support from the younger generation may be provided even without co-residence.[...] Similarly, co-residence does not always indicate flow of support from the younger to the older generation; co-residence may also imply child-care or help in household chores by the elderly". Thus, even when children are living in the same house as their parents, this is no proof of the elderly parents' dependency. Adult children themselves too can turn to their senior parents when in need of a residency. Similarly, lifetime savings of the elderly may be used to acquire a house for their adult children. Schröder-Butterfill therefore makes a valid point when she argues that "rather than trying to infer dependence from living arrangements, elderly people's likely need for support in old age should be examined directly".

Let us now turn to a next category: economic support. The extent to which a person is economically dependent should depend upon their work status, their income and their savings. Nevertheless, "Demographers often present the dismal picture of the elderly by calculating the old age dependency-ratio which is said to reflect dependency burden on the so-called working population (aged 15-59).

However, this index gives a false picture of economic dependency because neither all in the ages 15-59 work nor all above the age of 60 years are dependents. Based on census information, it is established that a significant proportion of elderly continue to be in the working force and hence the stated dependency-ratio needs to be revised by considering only the nonworkers beyond the age of 60 years" (Irudaya Rajan Mishra & Sankara Sarma, 1999). I fully agree with the authors above and would say that this is enough reason to be wary of any definition of dependency ratios as merely based on age. Furthermore, it should be précised on whom exactly dependents are dependent: on the state, children, friends, neighbours or society at large?

Even though in my sample many seniors provided their adult children with physical, emotional, residential or financial aid in times of distress, this did not necessarily mean that they could count on their children when they were themselves in need of help. As discussed before, with a great out-migration of adult children, this is often not even practically possible. When elderly do need direct support in cases of emergency and even long-term care, I in fact found the role of servants, friends, same aged relatives and neighbours in many cases to be extremely important. Therefore, I would like to conclude this paragraph with a last quote from Schröder-Butterfill: "[...] the findings add to the growing body of evidence that elderly people cannot be treated as a homogenous group, much less as a population that is dependent as a matter of course. Analysis and interpretation needs [therefore] to take better account of subgroups within the elderly population on the basis of characteristics like health, economic status and kin availability" (Schröder-Butterfill, 2002).

Conclusion

The above mentioned weak points of certain quantitative studies in the area of ageing, should not be taken as criticisms but more as a call for closer cooperation between these two complementing forms of research. In short, qualitative research may be very instrumental in acknowledging the heterogeneity within the population group of elderly as well as giving them more autonomy. This is also important on a policy level: practical, small-scale and local participatory research may provide many more applicable answers than large, generalised surveys can offer. Some may then argue that regarding the limited attention given to elderly in policy making and the dismal situation of

a large group of unhealthy, immobile, dependent and poor elderly, researchers should do everything to convey this picture of a problematic population group in need of help and solutions. Although I do agree that more attention to the issues of elderly is necessary and important, I do not think that picturing them as one big burdensome problematic group will do the trick. If anything, this will only have negative consequences on the social and cultural attitudes towards elderly and make them lose dignity in the eyes of society. Therefore, the attitude researchers should have towards their elderly subjects of study, is an open and respectful one, with attention to all aspects of ageing. I hope to have demonstrated that in order to achieve that, a closer cooperation between qualitative and quantitative methods of study would be very beneficial.

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Footnotes

- 1 "Emic" and 'etic' (derived respectively from 'phonemic' and 'phonetic') designate two contrasting levels of data or methods of analysis. An emic model is one which explains the ideology or behaviour of members of a culture according to indigenous definitions. An etic model is one which is based on criteria from outside a particular culture"(Barnard, 1996: 180). Problematic about these concepts is that anthropologists often present emic models "as though they are 'discovered' rather than 'invented'. However, emic models, [...] are ultimately exogenous constructions, formalized by the analyst on the basis of distinct features present in indigenous usage.'(181). Still, notwithstanding possible criticism of the concepts, I am using the distinction here to show the crucial differences between a definition of

‘aged’ fixed by the researcher beforehand and consequently applied to respondents in the field and a definition of ‘aged’ based on reactions of respondents to stimuli given by the researcher.

- 2 For the purpose of anonymity, all names have been changed.
- 3 This opinion was recorded amongst agricultural workers in Kerala’s neighbouring state Tamil Nadu. However different these respondents’ situations, interestingly, there are some commonalities in how they think about the definition of ‘old’.
- 4 The fact that cultural processes are often too complex to be studied by quantitative measures is the reason why most social/ cultural anthropological research is performed with qualitative means.
- 5 Census definition of ‘head of household’: “the person who has chief responsibility for the economic maintenance of the family”(In Irudaya Rajan & Zachariah, 1997).
- 6 In this study I have mainly focussed on the power relations between elderly women and their children. If the power relations within elderly couples would also be investigated, the picture would most probably be even more complicated and diverse.
- 7 Particularly amongst the Nayars. For more information about this system and its particulars in Kerala, see for instance G. Kurian (ed.) ‘The Family in India; a Regional View
- 8 That is, unless they specifically ask for ongoing processes, movements and changes.
- 10 This was for instance the case when an elderly grandmother, who had initially told me the house was hers, explained how in fact she had recently given the property to her daughter. The family had difficulties finding suitable husbands for her two marriageable granddaughters and were told that the families of possible boys found the property to be too far out of reach. If the property were to be given to the mother, they could be more sure of eventually inheriting it. And so in order for her two granddaughters to be married off, not only dowry was given, but grandmother had also passed on her most valuable possession and safety net.
- 11 With ‘easily visible’ I actually mean, ‘easily countable’. These two forms of support have been most intensively studied by especially economists and demographers, since at first sight both forms are easily quantifiable. However, this is exactly what is also problematic about these ‘easily quantifiable’ forms of support; they often turn out to be a lot more complex after close scrutiny.

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Knowledge and Practices of Caregivers of the Elderly (≥ 75 years) : Impact of NHE on Health of the Elderly

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ABSTRACT

Increase in the elderly population in recent years has led to greatest problem of caregiving to the elderly. Quality of care received by the elderly largely depends on the knowledge of the caregivers and resources available. Knowledge and practices of the caregivers of 150 male and female elderly subjects (≥ 75 years) belonging to three different income groups from free living population of Baroda city were studied. The data included the information regarding socio-demographic profile and knowledge and practices of the caregivers (by using a semi-structured questionnaire), activity pattern, disease profile (through checklist) and nutritional status of selected elderly in terms of anthropometry, hemoglobin assessment and dietary intake by 24-hr dietary recall and food frequency. The findings of the study have been discussed by comparing three income groups. The results showed that knowledge and practices of caregivers from HIG and MIG were better regarding ageing, health problems, dietary aspects in terms of daily meal pattern, type of meal, change in food consumption pattern as compared to LIG due to poverty and ignorance. Many of the caregivers had retained knowledge and practices after NHE intervention of two months. Also man nutrient intake of energy, protein, calcium and iron significantly improved ($p \leq 0.05$) after NHE intervention but still did not met the RDA.

Keywords: Knowledge, Practices, Caregivers, Elderly, Nutrition Health Education (NHE).

The population aged 60 years and older is enlarging both in relative and in absolute numbers. As the population age structure is rectangularized, intergenerational and intercohort relations need to be reappraised and altered. The structure and relations of families are being modified by the fertility and morality changes.

There is a growing concern in Asia with how the elderly will be supported and cared for in the twenty first century. Rapid urbanization has resulted in breaking up of the traditional joint family system. As a result the elderly people are left to look after themselves. According to the National long term care survey (1994), more than seven million persons are informal caregivers mainly women as a daughter-in-law, wife, daughter etc. provide unpaid help to older persons who live in the community and have at least one limitation in their activities of daily living.

Advancing age brings about various problems which interfere in the day to day routine activities of the elderly. These, in turn, affect the nutritional status of the elderly. However, even in joint families, the health and nutritional status of the elderly depends on the caregivers, to a large extent. Millen (2001) studied 239 elderly (> 65 years) and concluded that the nutritional status was poor in home bound persons of very advanced age with substantial co-morbidities and functional dependency. Even in a study by Gloth (1995) on 80 subjects (> 65 years) comparing nutrient intake of frail homebound elderly population in community Vs nursing home and it was found that iron and Vitamin A deficiency was seen in frail home bound elderly than in subjects from nursing home.

The existing knowledge of the caregivers with respect to the dietary care and health needs of the elderly determine the awareness regarding various aspects of ageing. However, actual practices of the knowledge would be effective in improving the nutritional status of the elderly.

Silver and Weuman (2002) suggested that NEE will reduce the burden on caregiver herself thus assuring healthy life for the elderly.

Therefore, the present study aimed at assessing the knowledge and practices of the caregivers of the elderly (≥ 75 years). The study also focused on evaluation of impact of NHE on health of the elderly.

Research Methodology

One hundred and fifty elderly subjects (≥ 75 years) belonging to three different income groups from free living population of Baroda city were selected through snow all technique. Baseline data included socio-demographic profile, knowledge and practices of the caregivers, disease profile and activity patter were collected on the same subjects. NHE was imparted to 30 caregivers of the elderly from MIG through booklet and personal interviews. Post intervention data was collected after two months where nutritional status of the elderly was assessed and impact of NHE was evaluated.

A semi-structured questionnaire was used for collecting information on socio-demographic profile, knowledge and practices of the caregivers which included questions on ageing, medical and health problems, dietary aspects, mental and social care. A similar type of questionnaire was used for evaluating the impact of NHE imparted to the caregivers.

Data was analyzed by using an appropriate methodology and statistical analysis such as score system, frequency distribution and t-test.

Results and Discussions

Socio-demographic Profile

The results showed that majority of elderly subjects were in the age group of ≤ 80 years, married and staying in joint families. In comparison to HIG and MIG, 52% of LIG elderly were illiterate and 40% were working.

In case of caregivers, majority were above 50 years of age, of whom most were females which included daughters-in-law (15-30%) followed by wife (15-25%) in all three groups. In LIG 26% of elderly were self care takers.

Knowledge and Practices of the Caregivers

Aging and Health Problems

The results revealed that 40% caregivers from HIG and MIG had better perception regarding ageing as compared to LIG (30%). IN all three classes, more than 78% caregivers were ignorant about different minor and major health problems and internal physiological changes taking place in old age. With regard to knowledge about nutritional

disorders in old age, 50% of caregivers from HIG and MIG had good knowledge about the same, where as only 16% in case of LIG caregivers showed awareness in this regard. Knowledge scores tested for psychological problems were in the fair category (3-5), in more than 46% of caregivers from HIG and MIG. More than 85% had good knowledge (>5) for reasons which caused these problems. In LIG, caregivers had poor knowledge (<3) for both psychological problems and reasons.

Dietary aspects

Table-1 : Percentage of Caregivers showing Knowledge and Practices Regarding the Dietary Pattern of Elderly (≥ 75 years)

Sr. No.	Characteristics	Knowledge			Practices		
		HIG (N=50) % (n)	MIG (N=50) % (n)	LIG (N=50) % (n)	HIG (N=50) % (n)	MIG (N=50) % (n)	LIG (N=50) % (n)
1.	Diet Quantity						
	Increased	2 (1)	—	—	2 (1)	2 (1)	4 (2)
	Decreased	96 (48)	100 (50)	100 (50)	96 (48)	98 (49)	94 (46)
	No change	2 (1)	—	—	2 (1)	—	4 (2)
2.	Frequency						
	Once a day	—	14 (7)	16 (8)	—	—	—
	2-3 times/day	88 (44)	70 (35)	84 (42)	88 (44)	94 (46)	96 (48)
	4-5 times/day	12 (6)	16 (8)	—	12 (6)	8 (4)	4 (2)
	Not to be given	—	—	—	—	—	—
3.	Consistency						
	Solid diet	—	—	—	—	—	4 (2)
	Semi-solid diet	4 (2)	46 (23)	8 (4)	94 (46)	72 (37)	94 (46)
	soft diet	96 (48)	50 (25)	92 (46)	8 (4)	24 (12)	4 (2)
	Liquid diet	—	4 (2)	—	—	—	—
	Clear liquid diet						

Knowledge and practices of caregivers regarding dietary aspects indicated that more than 70% had poor knowledge about ideal frequency of meal to be given in old age. But more than 50% had good knowledge about type of consistency of food which they did not practice (< 24%).

Table-2 : Percentage of Caregivers showing Knowledge and Practices Regarding the Dietary Pattern of Elderly (≥ 75 years)

Sr. No.	Characteristics	Knowledge			Practices		
		HIG	MIG	LIG	HIG	MIG	LIG
		(N=50) %(n)	(N=50) %(n)	(N=50) %(n)	(N=50) %(n)	(N=50) %(n)	(N=50) %(n)
1.	Diet Quantity						
	Good Knowledge	44 (22)	36 (18)	6 (3)	20 (10)	20 (10)	4 (2)
	Fair Knowledge	52 (26)	58 (29)	70 (35)	60 (30)	54 (27)	60 (30)
	Poor Knowledge	—	4 (2)	24 (12)	18 (9)	24 (12)	20 (10)
2.	Lunch						
	Good Knowledge	—	—	—	2 (1)	4 (2)	—
	Fair Knowledge	80 (40)	4 (2)	78 (39)	48 (24)	50 (25)	46 (23)
	Poor Knowledge	—	—	—	4 (2)	—	2 (1)
	Not Aware	—	—	—	6 (3)	2 (1)	2 (1)
3.	Evening Snacks						
	Good Knowledge	—	—	—	6 (3)	2 (1)	2 (1)
	Fair Knowledge	84 (42)	74 (37)	84 (42)	56 (26)	24 (12)	4 (2)
	Poor Knowledge	14 (7)	26 (13)	16 (8)	38 (19)	74 (37)	92 (46)
	Not Aware	2 (1)	—	—	—	—	2 (1)
4.	Dinner						
	Good Knowledge	—	—	—	4 (2)	4 (2)	—
	Fair Knowledge	90 (45)	90 (45)	98 (49)	94 (47)	84 (42)	64 (32)
	Poor Knowledge	10 (5)	10 (5)	2 (1)	2 (1)	12 (6)	34 (17)
	Not Aware	—	—	—	—	—	2 (1)
5.	Late Night						
	Good Knowledge	58 (29)	46 (23)	22 (11)	40 (20)	32 (16)	4 (2)
	Fair Knowledge	14 (7)	4 (2)	12 (6)	6 (3)	2 (1)	—
	Poor Knowledge	2 (1)	2 (1)	2 (1)	14 (7)	2 (1)	—
	Not Aware	26 (13)	48 (24)	64 (32)	38 (19)	64 (32)	96 (48)

Practices regarding meal pattern were poor even though fair knowledge existed in more than 58% caregivers from HIG and MIG. More than 40% caregivers from HIG and MIG believed in reducing consumption of the foods such as whole grains, whole pulses and unhealthy foods (fried foods, sweets, etc.) with no changes in consumption of milk and milk products, fruits and fluids. The same was being practiced by them. But in LIG no change in consumption pattern was reported with respect to any food groups.

Table-3a : Mean nutrient intakes of elderly female (> 75 years) from MIG group before and after NHE intervention

Sr. No.	Nutrients	RDA	Male MIG (Female) Mean $\pm$ S.D.		t value
			Pre data (N=15)	Post data (N=15)	
1.	Energy (kcal)	1750	1001.0 $\pm$ 159.05	1216.8 $\pm$ 248.18	2.73*
2.	Protein (gm)	60	32.6 $\pm$ 4.9	34.4 $\pm$ 5.9	1.15
3.	Fat (gm)	30	38.3 $\pm$ 6.8	37.3 $\pm$ 4.7	0.47
4.	Calcium (mg)	400	200.5 $\pm$ 59.5	303.4 $\pm$ 147.7	2.31*
5.	Fiber (gm)	20	4.3 $\pm$ 4.3	4.11 $\pm$ 1.4	0.19
6.	Iron (mg)	30	5.9 $\pm$ 2.3	7.05 $\pm$ 3.14	1.16*

* Significant at (≤ 0.05)

Table-3b : Mean nutrient intakes of elderly female (> 75 years) from MIG group before and after NHE intervention.

Sr. No.	Nutrients	RDA	Male MIG (Female) Mean $\pm$ S.D.		t value
			Pre data (N=15)	Post data (N=15)	
1.	Energy (kcal)	1350	1080.0 $\pm$ 170.59	1095.4 $\pm$ 178.8	0.60
2.	Protein (gm)	50	33.9 $\pm$ 6.4	34.7 $\pm$ 6.5	0.13
3.	Fat (gm)	30	39.4 $\pm$ 5.8	36.4 $\pm$ 8.0	1.22
4.	Calcium (mg)	400	294.3 $\pm$ 146.4	365.9 $\pm$ 152.2	1.16*
5.	Fiber (gm)	20	5.4 $\pm$ 2.0	5.6 $\pm$ 2.6	0.34
6.	Iron (mg)	28	5.9 $\pm$ 2.5	6.3 $\pm$ 2.5	1.23

* Significant at (≤ 0.05)

More than 60% subjects indicated that water requirement during old age should be more than 8 glasses per day. However, in practice 20-40% elderly drank 5-8 glasses of water in all three groups.

Social Care

More than 40% of caregivers from all three classes provided social support to their elderly. Overall findings indicated that caregivers from HIG and MIG had better knowledge and practices as compared to LIG.

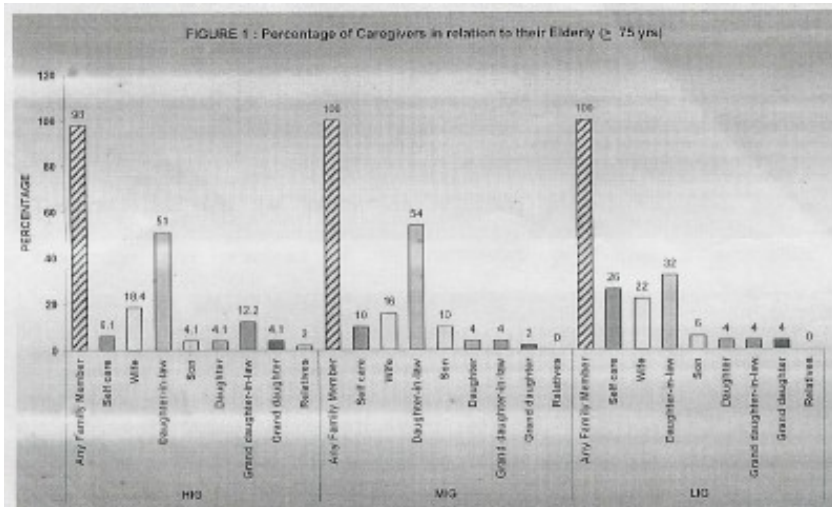


Figure-1

Activity Pattern

Data on activity pattern of elderly showed that majority of elderly subjects from all three groups had a sedentary life style.

Disease Profile

Disease profile of the elderly showed that majority of elderly from all three classes reported oral cavity problems ($\geq 88\%$) followed by nervous ($\geq 50\%$) and GIT problems ($\geq 64\%$).

Pre and Post NHE intervention

Data on nutritional status of the selected elderly male and female showed no significant difference in anthropometric measurements and hemoglobin level, before and after NHE intervention of two months. But mean nutrient intake of energy, protein, calcium iron significantly improved ($P \leq 0.05$) after NHE intervention but still did not met the RDA.

Food frequency data showed that consumption of vitamin C rich foods in males (46.7%) and intake of fiber and fluids in females ($\leq 80\%$) had increased after NHE intervention.

Data on evaluation of NHE intervention in selected elderly showed that many of the caregivers had knowledge retention and

followed the same in practice regarding almost all aspects of elderly's overall health care indicating positive impact of NHE.

The present study shows beneficial effect of imparting NHE to caregivers on the health of the elderly. Such an approach can be fruitful in promoting proper health care and thereby improve quality of life of the elderly at large.

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Challenges and Issues in Formal Care giving

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ABSTRACT

Older people constitute the fastest growing age group in India. The trends in growth, structure and composition of elderly population reveal the emergence of aging as a concern. The unprecedented pace of social and economic transformation has further accentuated the problem. The traditional norms and values of Indian society stress respect and provision of care for the elderly. However, the ongoing processes of urbanization industrialization, modernization, globalization and their concomitant processes have led to changes in the traditional support base of the elderly. There is an acute need for formal arrangements to supplement the informal ones. Creation of enabling environments for older people to be self sufficient is one of the growing needs and challenges of our country in the new millennium. There is thus a need to study formal care, to design programs and strategies to help improve the quality of care.

This paper is based on findings from a semi-structured interview schedule canvassed to the managers of 25 old age homes (OAHs) in the twin cities of Hyderabad and Secunderabad to elicit information on the challenges and issues in formal care giving and their suggestions for improvement.

Keywords : Population aging, Squaring of demographic pyramid, Formal care, Quality of care, Care giving, Familism, Supportive services, Quality of life, Leisure time activities, Well being, Familial piety.

Population aging has resulted in the emergence of aging as a social concern. The “Squaring of Demographic Pyramid”, affects most aspects of our lives – economy, labor force, health care, social welfare,

social attitudes and social institutions to mention a few. Thus, aging in its varied ramifications has acquired importance world wide.

In India older people constitute the fastest growing age group , from 77 million in 2000, it was projected that the population of aged will increase to 179 million by 2026 and 2050, 21% of the country's population will be 'aged'. The trends in growth, structure and composition of elderly population reveal the emergence of aging as a concern. The unprecedented pace of social and economic transformation has further accentuated the problem. The traditional norms and values of Indian society stress respect and provision of care for the elderly. However, the ongoing processes of urbanization industrialization, modernization, globalization and their concomitant processes have led to changes in the traditional support base of the elderly. This has resulted in declining possibilities of family care and greater need for self and formal care. While familism is on the decline, co-residence has become difficult and a separate existence is challenging due to issues of access to basic facilities and physical security.

There is an acute need for formal arrangements to supplement the informal systems. However, there is a tendency to view these arrangements of domestic affairs as a kind of moral crisis rather than somewhat inevitable fall out of demographic change (Willigen, 2000). Though children are willing to help their elderly parents, due to a multitude of factors, they are unable to provide total support. In this situation of multiple crisis and frustration, with inadequate supportive services formal care can be a substitute for family. However, formal care has its complications; it drastically changes life and affects the quality of life. The results of studies on impact of living in formal care versus informal care have been conflicting and inconclusive. As the aged are heterogeneous no single environment can cater to the needs of all old people. Creation of enabling environments for older people to be self sufficient is one of the growing needs and challenges of our in the new millennium. There is thus a need to study formal care, to design programs and strategies to help improve the quality of life of elderly.

Present Study

The present study is based on findings from a semi-structured interview schedule canvassed to managers of twenty five OAHs in the

twin cities of Hyderabad and Secunderabad. Of these twenty-five OAHs only one is run by the Government of Andhra Pradesh (Dept. of women welfare and child development), nineteen are run by trusts and welfare associations and five are run by individuals. Only three OAHs are 'free' for all, these are run with funds from government and donations, one is free for women only (while the men have to pay) and the remaining are pay and stay with a fee ranging from Rupees Four hundred per month to Rupees Four thousand five hundred per month.

The age of these institutions varies from six months to twenty four years. These Homes have a total capacity for inmates ranging from ten to hundred and seventy and staff ranging from one to fifty in numbers. The accommodation varies from a dormitory common for all, with a common bath to single room with attached bath and provision for getting their own gadgets, including provisions for cooking. Of these, only five OAHs admit the bed ridden, on the condition that their diseases are not contagious. Four OAHs are exclusively for women. One OAH is exclusively for Brahmins. The total capacity of these OAHs is nine hundred and three, while the present strength is seven hundred and fifty two. As is evident the OAHs are varied, each having its own problems.

As the managers have hands on experience of managing the Homes, they are better placed to inform on the problems in formal care giving. Further suggestions for improvement have been elicited to understand what they consider essential in providing better care. After analysis the problems cited by the managers have been categorized into five : 1. The inmates, 2. The inmate's family members, 3. Provision of facilities and services, 4. Financial constraints and 5. Lack of support from the Government.

The inmates

- The everyday problem for the managers was, having to deal with the complaints of the inmates, who it seemed were temperamental, having problems of adjustment with other inmates as well as with staff.
- Often it was complained that the inmates did not heed to the manager, they were stubborn and a few of them were always quarrelling with others.

- Some of them wanted the staff to work for them exclusively. Some tried to dominate the staff. One manager commented that the inmates were always trying to derive at OAHs what was deprived to them at home with their families.
- Most of the problems it appeared were due to communal living-problems of sharing baths, toilets, timing of water, TV channels, seats in the TV room, etc. created differences and disputes.
- Some inmates were always afraid of falling ill; they magnified their minor complaints or made up non existing ones.
- In other cases the elderly did not bring their discomfort to the notice of the staff and some of them even did not take their medication, it was difficult to monitor each inmate's medicines as the staff had other duties to attend to.
- Individuals with different temperaments required different care. Some were gregarious and other reticent. Dealing with such varied temperaments needed skill which the managers felt were inadequate.
- Individual attention could not be given to each inmate as they were short of staff and there were many duties the staff had to attend to.

The inmate's family

- One problem the management often faced was the unavailability of the inmate's family, especially in times of emergency.
- At times the management was not informed of changed address of an inmate's family causing inconvenience.
- Often the monthly payments were not regular in spite of persistent requests and notices. Occasionally the family did not pay the full fee.
- Sometimes the medical bills were not reimbursed by the family; further in some cases the management's decision about taking the inmate to hospital, choice of hospital, choice of doctor etc. were questioned.
- There have been instances when the last rites of an inmate had to be performed by the Home as the inmate's family did not claim the body.

- In some cases dues were not cleared after the inmate had passed away.
- Often the inmates request to visit their families, while the management has been asked by the family members not to permit their visits frequently.

Provision of facilities and services

- One common complaint was insufficient accommodation
- Finding good staff and retaining them was difficult
- Providing medical facilities and also dealing with medical emergencies was difficult.
- In case of an emergency and hospitalization, providing the inmate with an attendant was not feasible as the managers or any of the staff could not afford to leave the Homes for too long and the inmate's family was not always immediately available.
- While most OAHs provided "every day" medicines the inmates had to purchase their own medication if they had any.
- In some cases the location of OAHs created problems. Often there were no medical facilities available in the vicinity. In case of an emergency the managers had to wait till an ambulance arrived.
- OAHs could not provide for bedridden as they needed different care requiring professional services and also 24 hr assistance. This was difficult to provide for because of constraints of space, manpower, funds etc.
- It was difficult to provide for recreational facilities because of constraints. Further the inmates seemed disinclined to participate in most of the leisure time activities. They preferred watching TV, listening to radio or tape recorder. The most common activities were reading news paper; some Homes had a few books, bhajans, occasional lectures on religion and spirituality and more importantly interaction with other inmates.
- Except a few the Homes did not have their own vehicles. They had to rely on public transport. At times a manager's personal vehicle was used. The inmates had to arrange their own transport.

- Trained staff was unwilling to work in these Homes as the career opportunities were limited and pay and other incentives were not lucrative.

Financial constraints

- Most problems in managing the Home were somehow linked to financial constraints. These constraints hindered the quality of care as they restricted the provision of more and better facilities.
- While the OAHs with government funding complained of meager and inadequate funds, the pay and stay Homes also complained of insufficiency of the inmates' fees and other donations in running the Homes.
- Often the donations were negligible and it required a lot of pursuing and persisting to get donations. People were only willing to give away what they did not want rather than what the Inmates needed.
- The Homes accommodated in rented buildings had to shell out a substantial amount of money on rentals.

Lack of support from Government

- For most Homes getting grants from government is near impossible, owing to the rules, regulations, procedures and corruption.
- All the more so for the newly started Homes, to apply for grants from government the required strength of 20 inmates is an impediment.
- In one case thought government had granted lease land for construction of a building for OAH, his land had no proper patta as it was under litigation. It led to a lot of inconvenience for the management and they were finally forced to give up that land.
- In another case the care taker insisted that since grants from government meant, reports, inspections, accounts and other procedures – grants were a big head ache. And he therefore preferred not to apply for any grants.
- Most managers of OAHs without funds from government complained that the government was not encouraging genuine

service, corruption, nepotism; favoritism influenced the grants and not performance.

Other problems

- One peculiar problem of the “free’ OAHs was that the inmates came and let at their own free will, while in the pay and stay OAHs the inmates had to pay for their rooms even in their absence to retain their rooms considering the ‘waiting list’ for admission to the Home.
- Every manger complained that the OAHs are running on commercial lines, they have become a business and the other Homes lack service motto.
- One particular instance of an attempt to misuse of IT exemption granted to a Home was made by an individual for the construction of an OAH...he had even offered a percent in the savings.

Measures for improvement as suggested by the managers

- Service oriented OAHs and staff
- Better recreational facilities are a must as leisure is harmful for the well-being of the elderly
- Surveillance by Government to monitor OAHs
- Provision of financial support for the service oriented Homes
- A proactive management
- It has been suggested by a few managers that the government should not give funds but should itself run the Homes as the grants are being misused and the running OAHs has become a business.
- Corruption and nepotism should be checked in granting funds.
- Efforts should be made to remove the negative attitudes and stigma that prevails with regard to OAHs.
- OAHs caring for the bed ridden should have medical tie ups with nursing Homes
- All OAHs should have some tie up with hospitals for dealing with emergencies.

- Every OAH should have spacious accommodation and a garden to keep the inmates involved in gardening and also to create a pleasant environment to live in.
- Each Home must have its own building and not rented accommodation.

MY OPINION

- Adequate attention has to be paid to physical arrangements as they promote social relations which further promote well being.
- Ways of creating social environments for elderly in formal care has to be further researched.
- Emphasis has been placed on physical health while other needs such as social, spiritual, emotional, intellectual and environmental are ignored.
- Quality of care influences adjustment and quality of life. Warmth and autonomy constitute a most important part of care. Efforts have to be made to ensure inmates have greater opportunity to make decisions over their lives than what was routinely available.
- In our country the concept of community living, housing complexes for independent elderly has not yet taken roots but would be a good alternative for residential care.
- Social and legal sanctions are inadequate to involve unwilling children to support their elderly parents. Buttressing familial piety is challenging. While attempts are being made at strengthening familism, one other way of limiting formal care is by creating alternative possibilities of care, homecare, elderly day care centers can be viable alternatives.
- We only have a rudimentary social security which covers a small population and that too inadequately. There is a need for rethinking on the role of state in caring for the aged.
- The success of formal care depends on how well organized and systematic it is at the same time it should not become depersonalized.
- The care takers should be sensitized to the needs of the elderly. They should be trained and should be offered a decent pay. During one interview a manager who was talking about “service

motto” chided one of the inmates for complaining about inadequate attention-”this is why your family has thrown you out”.

- Another manager on inquiring about leisure time activities nonchalantly commented that – as the Home is located on one of the busy cross roads in the city the inmates had a lot of accidents to watch on the roads! And that kept them busy!
- Some qualification has to be made mandatory for the appointment as managers of care Homes.
- The changing life styles call for a paradigm shift in our approach to elderly. Awareness and attitudinal changes in the general public and those responsible for the care of the elderly need to be changed. There is a need for social engineering. A national media effort has to be launched for the purpose.
- People should be encouraged to plan for their old age. They should not be caught up in expectations and be more ready for aging independently. Control over property and assets will help in maintaining some control over ones own economic status and curb dependence.
- The problems of adjustment are mainly because elderly expect the children to care for them. However when this becomes impossible they feel betrayed and have problems of living. There is a need for attitudinal change among the elderly and the to be elderly.
- Elderly should keep themselves occupied; it helps in building a sense of worth. The elderly forming self help groups or volunteer groups, working for the welfare of elderly can be assets and can themselves be solution to their problem.

Conclusion

Lack of institutional care is one of the causes of dependency. Further care giving burden at home results in abuse. The elderly are forced to live with their families’ in spite of abuse. Formal care can relieve them of this. In spite of issues of erosion of family values loss of social cohesion, rise of individualism the need for formal care is evident, it is evident that family is the best source of care giving and the place for every individual to spend his last years but when it is not available or is in a form that is a hindrance to well being, formal care

provides a choice. Formal care if well organized provides for independence, participation care dignity and self-fulfillment (UN principles) and can add quality, to lives of elderly. There is a greater need for research on the creation of enabling environments for the elderly. The problem if ignored can turn into a crisis. It could even countervail the process of development itself. This would go a long way in providing a better future for all of us- YOUNG AND OLD.

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A Comparative Study on Health Services Utilisation and Cost : Male Elderly in Community and Institution

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ABSTRACT

In India elderly persons constitute 7 per cent of the total population, which is about 70 million (Census of India, 2001). The medical advancement has increased the life expectancy but has not made elderly free from illness and disability. Health service utilization will enable identification and treatment of illness among elderly thereby preventing disability and burden among carers. There is paucity of studies on the utilization and cost of health service among elderly persons in different illness groups. The present study aims to examine the health services utilization and cost incurred by the elderly. 76 per cent of elderly in the community and 26 per cent of elderly in the Institution did not use any health service in the previous three months. The utilization of health services was found to be high among the elderly in the Institution. The preference of type of health services and cost incurred for health by these two groups are discussed in details.

Keywords : Elderly, Health service utilization, Cost, Medication, Hospitalisation.

By the year 2025 AD, it is estimated that Asia will be home to 48 per cent of the worlds elderly persons, and the largest elderly persons population on earth will be in China and India (Prakash, 1999). In India elderly persons constitute 7 per cent of the total Population which is about 70 million (Census of India, 2001). The population projections by the UN expect the elderly population to be 142 million by 2020 in India.

The medical advancement has increased the life expectancy, but has not made elderly free from illness and disability (Resnick, 1997). Health service utilization will enable identification and treatment of illness among elderly thereby preventing disability and burden among carers. There is paucity of studies on utilization of health services in general and in reference to particular illnesses like dementia, depression and other medical problems in India. Study done in UK, reported that the use of health services were greater among the dementia group than the control group (Philip *et al.* 1995). Luber *et al.* (2001) reported patients with depression had increased out patient consultations than the normal group. Nair (1980), in his study on the health status of elderly persons, has observed that aged people have several illness and the aged remain indifferent to their health. Elderly persons have the habit of refraining from seeking medical aid from hospitals due to lack of finance and attitude that oldage is an age of ailments and physical infirmities. Many of the ailments causing disability, which can be treated, are considered as natural and inevitable process of Oldage (Raju, 1997). This study was designed to elicit preference over the type of health service and cost incurred on consultation, medication and hospitalization.

Material and Method

A structured interview schedule was designed to ascertain the type of health services preferred, frequency of visits and cost of services. The schedule contained items on demographic details, utilization of Government General Hospitals, Corporate Hospitals, Public non-profit hospitals, traditional healers, indigenous medicine and private doctor. Information was also collected on the cost of medication per month and cost of hospitalization cost in the previous three months. A qualitative component measured worries about health and sense of well-being.

The sample consisted of 50 male elderly persons above the age of 65 years; 25 living with the families in the community and 25 living in an institution in Chennai. Elderly with chronic illnesses and disability were excluded, as the health service utilization is likely to be high.

Results

Table-1 : Demographic Details

Variable	Normal (C) [SD]	Normal (O) [SD]
Number of respondents	25	25
Mean Age	70.0 (6.0)	72.5 (7.3)
Mean Income	2511.72 [2060.80]	184.00* [55.38]

Education

No Education	0	2 (8)
Primary	13 (52)	(13 (52)
Higher Secondary	9 (36)	7 (28)
Graduation	3 (12)	2 (8)
Post-Graduation	0	1 (4)

() Standard Deviation, [] Percentage; * P = < 00.05, Normal (C) = Normal elderly in the community

Table-2: Utilisation and Cost of Health Services; Private Doctor, Hospitalisation Medication

	Number of Elderly Utilised	Mean Cost	Standard Deviation
Visit to Private Doctor	%		
Community	6 (24)	20	26.46
Institution	16 (24)	2.29*	5.62
Hospital admission			
Community	3 (12)	1833.33	1258.31
Institution	0	NA	NA
Medicines			
Community	12 (48)	117.50	99.99
Institution	22 (88)	7.73*	19.98*
Worries about			
Health	9 (36)	NA	NA
Institution	18 (72)	Na	NA

* P = <00.05

The age group of the elderly in the two groups were comparable; 't' test did not show any significant difference between groups. The mean income of the elderly in the institution group was lower than

other groups because none of the elderly received work related pension, they received either the Government pension or Institutional pension. The Institution gave pension to those who do not receive the Government pension so as to avoid disparity.

Seventy six per cent of normal elderly in the community and 26 per cent of normal elderly in the institution did not use any health service in the previous three months. None of the elderly used other health services like physiotherapist, nursing care at home. Also none utilised the services of traditional healers. Five elderly in the community group utilised the Government hospital services. In the community Group six elderly utilised the private doctor services the mean visits were 1 with maximum visits of four visits by one elderly, and in the institution group sixteen elderly utilised the private doctor services, the mean visits were 1.

The elderly persons in the institution group visited the Private Doctor more frequently than community group. (t value is 2.476 at $P = < 0.05$).

In community group the mean cost was Rupees 220 with standard deviation of 708.28. The standard deviation of this group is higher than the mean because of the uneven distribution of admission in the sample and higher cost incurred by few.

The mean cost of medicines for community group was Rupees 57.60 with standard deviation of 89.82. In institution group the mean cost of medicines was Rupees 6.80, with standard deviation of 18.87

In normal community group 36 per cent and in Institution group 72 per cent were worried about their health. Contrary to the concern over health, 76 per cent in the community group and 36 per cent in the Institution group did not utilize the health services in the previous three months.

Discussion

The utilization of health services among the two groups was found to be high among the elderly in the Institution than elderly living in the community. The utilization of health services among the Institution residents seems to be due to the accessibility within the premises, free services and free medicines. But there were no hospital admission in the old age group because the Institution has an

infirmary, in which the elderly are admitted and taken care by, trained nursing staff.

The present study elicited results similar to the observation made by Nayar (1987) that there were meager utilization of health services and preference to private practitioners than Government hospitals. The present health care system is quite non responsive to the needs of the elderly, in terms of cost and accessibility. It is found that in the Institution the utilization is higher because of accessibility resulting in higher concerns over health.

There is paucity of studies on the cost of health service utilization among elderly persons in different illness groups. The Institution group had lower cost on consultations because the institution was funding the consultation, treatment and medicines, the only cost incurred was buying medicines, when they were occasionally unavailable in the institution.

Future studies on health services utilization can try larger time frame like six months than there months as followed in the present study to observe whether there is any significant change in the health service utilization. Similarly the sample needs to have female section of the population. Also illness specific utilization of health services is required to see its impact on reducing disability and morbidity.

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Is a Social Security for the Elderly Enough? A Study of the Perception of Old Age Home Residents of Orissa

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ABSTRACT

In post-independent India, social security for the aged was at the bottom of the government's priority. The traditional joint family system and strong values placed on virtues of old age was reason enough to accord less attention to the elderly. With the growth in the processes of industrialisation and urbanization and changes in family and kinship organization the rising inadequacy of traditional arrangements for providing security and services to the aged became apparent. The state supported social security measures became a desirable alternative. Realizing this, both central and state governments initiated some programmes for the elderly. But how far have these policies and schemes succeeded in ameliorating the condition of the aged ? In this paper an attempt has been made to assess the effectiveness and the inadequacies of such policies. The perception of the old age home residents in Orissa towards the policies and schemes for the elderly constitutes another part of this paper. The findings from the study on old age home residents of Orissa shows that the residents are not aware of many of the schemes meant for the elderly. They also expressed a disinterest for the government programmes. The reasons for this can be located in the inability of the government to make its schemes known to the elderly population. This paper explores the reasons for this situation and makes some appropriate recommendations.

Keywords : Social security, Elderly, Old age home, Government, India.

The concept of social security is that the state is responsible for ensuring a minimum standard of material welfare to all citizens. Some of the contingencies covered in the social security system are sickness, maternity, occupational risks, invalidity, unemployment, old age, retirement and medical care. Thus, an ideal system of social security is meant for helping people in need.

In the post-independent India, the social security for the aged was at the bottom of the government's priority. The traditional joint family system and strong values placed on virtues of old age was reason enough to accord less attention to the elderly. With the growth in the processes of industrialization and urbanization, family and kinship organizations began to undergo change. The rising inadequacy of traditional arrangements for providing security and services to the aged became apparent. The state supported social security measures became a desirable alternative.

Realising this both central and state governments initiated a few programmes for the elderly. Uttar Pradesh was the first state to grant old age pension to the destitute in 1957 (Dandekar, 1996). Many other states too began providing financial aid to the elderly destitute, which is discussed later on. The pension schemes for government employees were updated and revised. The central government also funded a number of old age homes. But the Government of India's financial support to old age homes was not regular and substantial till 1990s. It was only in the National Policy on Older Person formulated in 1999 that the central government fixed certain amount for the assistance of old age homes. It was also the first comprehensive policy by the government to deal with the rising issue of ageing and age related problems.

Objective

The paper outlines the salient features of government provisions and schemes for the improvement of the elderly and also assesses the effectiveness of the government provisions and points out its inadequacies in meeting the needs of the elderly. It also discusses the responses of the old age home residents in Orissa towards government's policies and schemes for the elderly.

Setting and Method

The present study was conducted in six old age homes in the districts of Puri, Khurda, Jagatsinghpur and Ganjam in the state of Orissa between 2000 December and April 2001. Out of the six old age homes selected four old age homes are run by the government and two old age homes are run by the Christian missionaries. From these six old age homes, 55 residents were chosen for the purpose of this study. Out of these 55 respondents, 32 were males and 23 were females. The ratio in terms of religious distribution is 42 Hindus to 13 Christians. In order to elicit the responses of the old age home residents, interview schedule was used. The researcher also made use of observation method whenever possible which yielded results untapped by the interview method. To assess the role of the government, the secondary sources of data such as government policy and implementation records, the reports of the NGOs on old age schemes were used.

Salient features of government policies

The government of India has evolved certain programmes and policies to provide social security to the elderly population of the country. The National Policy for Older Persons formulated in 1999 aims to strengthen elderly people's legitimate place in society and help them live the last stage of their lives with purpose, dignity and peace (Ministry of Social Justice and Empowerment, 1999). In order to systematize the policy; it has identified principal areas of intervention. These can be broadly categorized as financial security, health care, food and shelter, family, media and education. The following section deals with the policies in each area of intervention and the government at provisions already made in this direction.

Financial Security

Since the financial situation of two thirds of the elderly population in India is critical, priority is accorded to this aspect. The retirement benefits for the central government employees is the biggest and the most important government provision for the social security of the employees in advanced years. The two main schemes of retirement benefits for the central government employees are the pension scheme and the contributory provident fund scheme. Pension is more important of the two.

Most of the non-industrial staff in the departments of central government is governed by the pension scheme. Pension is a right enforceable in the court of law. In no case an employee receives less than Rupees 1275 per month (Anonymous 1999). The spouse of the retired employee gets a family pension after the death of the retired person.

The contributory provident fund is given to employees who do not get pension. It is also sanctioned to employees retired from pensionable establishments of any civil or military department of the central government or state government or local fund administered by government or Port Trust or railways or re-employment in civil department. Employees of the public sector undertakings and autonomous bodies, who do not get pension, are also eligible for it. The employees such specified contribute minimum 10% of their salary to the contributory provident fund. The government also contributes 10% each month.

The government of India has a series of acts for the retirement benefits of the labourers in organized sectors of coal mining, gold mines, tea plantation and other industries such as the Payment of Gratuity Act 1972, The Coal Mines Provident Fund and Bonus Schemes Act 1948, Employees' Provident Funds and Miscellaneous Provision Act 1952, Employees Family Pension Scheme 1971 and the Employees' Deposit-Linked Insurance Scheme 1976 (Rajan, *et al.*, 1999).

In order to provide financial assistance to the poor elderly, the government of India introduced National Old Age Pension Scheme (NOPAS) from 15 August 1995 under the National Assistance Programme. The criterion of receiving NOAP is that the person must not be less than 65 years and must be a destitute. The amount given is Rupees 75 per month (Rajan 2001). It is worthwhile to note that the old age pension scheme existed before the 1995 Act in different states. The state governments have provided the old age pension mostly for destitute and infirm. In 1957, Uttar Pradesh, as mentioned earlier, was the first state to introduce an old age pension scheme. Since then many other states have followed the policy of providing old age pension to their state people. Prior to 1980, such schemes were in operation in 16 out of 22 states (Dandekar 1996). Although the National Social assistance scheme fixed the rate of social assistance for the elderly at

Rupees 75 per person, many states have added another Rupees 25 to Rupees 75 to the minimum. Orissa state government, for instance, provides state old age pension of Rupees 100 to the destitute elderly. After the introduction of the NOAP, the state government added another Rupees 25 to NOAP to bring parity between the two. The destitute elderly can only avail of either NOAP or state old age pension. The eligibility criteria for availing of the state pension vary from state to state, Sikkim has fixed 74 years for males, Rajasthan has decided it at 55 years for males.

The awareness about the programme has increased multifold since its inception in 1995. The achievement of the scheme in terms of numerical increase of the beneficiaries and amount claimed has reached above 90 percent. The current numerical ceiling is 6.9 millions and the amount spent is Rupees 61,929 lakhs (Rajan, 2001). A study made by Department of Rural Development has shown that the scheme has succeeded to reach out to the weaker sections of the society such as the Scheduled Caste, Scheduled Tribe, women and the handicapped (Rajan, 2001).

The old persons, in general, enjoy certain concessions in terms of tax payment and income tax returns (www.seniorindia.com). To add to it, the Indian Airlines and the Railways have certain concessions for the persons above 65.

Legal measures

In the post-independent India, the government of India began a few legal provisions for the elderly. The constitution in the Directive Principles laid down social security provision for the elderly. The Article 42 of the Directive Principle laid down social security provision for the elderly. The Article 42 of the Directive Principle of India constitution states. "The state shall, within the economic capacity and development, make effective provision for securing the right to work, to education and to public assistance in cases of unemployment, old age, sickness and disablement and in other cases of deserved want."

The right of parents without any means to be supported by their children having sufficient means has been recognized by Section 125 of the Criminal Procedure Code. The person can approach a jurisdictional First Class Magistrate for maintenance. Maximum

amount that can be provided as maintenance is Rupees 500 (<http://law.indiainfo.com/vitalinfo/210800maintenance.html>). The Hindu Adoption and Maintenance Act 1956 secures certain rights to parents. The Act states that a Hindu is bound, during his or her lifetime, to maintain his or her aged or infirm parents (<http://www.sudhirlaw.com/HINADMAN.htm>). Chief Justice of India has advised Chief Justices of all High Courts in the country to accord priority to cases involving older persons and ensure their expeditious disposal (<http://socialjustice.nic.in/social/welcome.htm>).

Health care

The health care of the elderly is given prime importance with provision of heavy subsidy for poor. Trusts, charitable societies and NGOs are encouraged to provide health services to the elderly in terms of free beds, medicines and treatment to the very poor elder citizens. The development of health insurance is also given high priority to cater to the needs of different income segments of the population. Public hospitals are directed to ensure that elderly patients are not made to long wait at different counters for medical test and treatment. Ministry of Health has issued instructions to state governments to have separate queues for old persons in hospitals 'in every stage' (<http://socialjustice.nic.in/social/welcome.htm>).

Food and Shelter

Public distribution system covers all 60+ populations below poverty line. To this end, the government of India is floating *Annnapurna* scheme to provide free food to the destitute elderly. ON March 19, 1999, the government of India announced this scheme for the elderly destitute who have no one to take care of them. Under this scheme, an elderly destitute will be provided with 10 kilograms of rice or wheat per month free of cost through the public distribution system. This scheme aims at covering those destitute that is otherwise eligible for old age pension scheme. The government has allotted a sum of Rupees 100 crores for the first year of its implementation and is expected that it will benefit around 6.6 lakhs elderly (Rajan 2001). The ministry of Rural Development is implementing this scheme with assistance from Ministry of Food and Civil Supplies. The progress has reported been very slow since by October 13, 2000, the allocated amount was released only to 15 states and 2 union territories (Rajan, 2001).

The government's National Policy for Older Persons plans to allot 10% of the housing scheme for elderly persons of the lower income group from both rural and urban areas. The housing colonies are to be built in such a way that the mobility and accessibility of the elderly residents to shopping complexes, parks, community centres and other services will be easy. Ground floors will be allotted to elderly persons. The policy calls upon the civic authorities to give top priority to cases of elderly people relating to the transfer of property mutation, property tax and other matters. Group housing of older persons with common service facilities for meals, laundering, and common room entertainment is also encouraged.

Education and Awareness

The educational and information materials that are relevant to the elderly are to be made available and accessible to them through mass media and non-formal communication channels. The elderly persons are being encouraged to train themselves in career development, creative use of leisure, appreciation of art, culture and social heritage and imparting skills in community work and welfare activities. The National Policy for Older Persons recognizes the importance of the media in disseminating knowledge about the situation of the elderly. The media can help in spreading the concept of active ageing. It can also aid in dispelling the myths of ageist stereotypes and negative images of old age. The policy targets making use of mass media, informal and traditional communication channels for spreading information on the issues of ageing. The educational and information materials that are relevant to the elderly are to be made available and accessible to them through mass media and non-formal communication channels. The elderly persons are to be encouraged to train themselves in career development, creative use of leisure, appreciation of art, culture and social heritage and imparting skills in community work and welfare activities.

Protection of Life and Property

According to the policy, special provisions will be made to protect the elderly from domestic violence. Tenancy legislation will be reviewed so that the rights of occupancy of the elderly are restored speedily. Voluntary agencies and associations of the elderly are encouraged to provide protective services to the elderly through the help line, legal aid and other measures.

Another serious issue that should be taken into account is the rise in crimes against the elderly in big cities and metropolises. Increasing urbanization and changes in the joint family structure and the trend of children taking jobs far away from their parents have left the elderly parents to depend on domestic help or to live alone. The safety and security of the elderly is in peril with the spread of criminals in big cities who target such elderly people living alone. The cities of Delhi, Mumbai and Chandigarh have witnessed such crimes in last few years. Gyan Kaur Vidyarthi, 82, a former legislator who lives alone in central Delhi told one of the correspondents of time, "Earlier I was bothered about arthritis and pensions. Now I worry about murderers."

To curb crimes against the elderly, the Delhi Police has introduced schemes such as the identification of senior citizens, neighbourhood distress alarms and instructions to the beat constables to check the well being of the elderly people periodically staying in the neighbourhood. Help Age India also conducts workshops regularly for the Delhi Police to make them aware of the special needs of the elderly. The police administration in Chandigarh has also started schemes such as Sampark, a helpline for the elderly and the appointment of beat constables for the safety of the elderly. But the elderly complain that such populist measures were stopped after some time and the local police do not take any action if they are asked to verify the credentials of the domestic help engaged by them.

Keeping in view such a rise in the crime rate against the elderly and the non-cooperation of the police administration in certain cases, the government must take steps to provide safety and security to the elderly people who are living on their own.

Apart from these specific policies, there are other areas where the government endeavours to assist the elderly. These include an identity card by the administration, fare concessions in all modes of travel, preference in reservation of seats and earmarking of seats in local public transport, modifications in designs of public transport vehicles for easy and safe entry and exist, strict enforcement of traffic disciplines at zebra crossings for the safe passage of the elderly, priority in telephone and gas connections and in fault repairs, concessions in entrance fees to leisure and entertainment facilities art and cultural centres and places of tourist interest.

Family

One of the thrust areas of the National Policy for Older Persons is the development of family ties. The policy guidelines lay down that those counseling services be provided to sort out intra-familial stresses. The policy envisages the children to stay with their parents by providing tax relief, allowing rebates for medical expenses and giving preference in the allotment of houses. People are encouraged to go for long term savings and investments so that it will be comfortable in advanced years.

Assessment

Looking at the government policies and provisions for the elderly, it becomes clear that the government has not planned any constructive programmes for the future of employees and workers in the unorganized sector. The employees and labourers working in the organized sector are assured of their social security in old age through the pension scheme and the contributory provident fund. But in India, nearly 90% of the total work force is engaged in the unorganized sector and 40% of them are wage earners (Rajan, *et al.* 1999). Their wages are very low and to add to their woes their employment is not certain throughout the year. The legal and government provisions for this section of employees are next to nothing. A few States and Union Territories have devised some schemes for their social security but it is not adequate at all (Rajan *et al.* 1999). Hence the government both at central and State level must initiate comprehensive plans for the social security of this sector of population in their advancing years.

The scheme of national old age pension for the destitute is effective in catering to the needy elderly. In combination with state old age pension, it has succeeded in providing social security to destitute elderly in all the states and union territories. The use of national old age pension among the elderly in general and the weaker sections in particular have increased manifold. But the maximum amount of old age pension given by any state on an average does not exceed Rupees 150. It is definitely a paltry sum considering the hike in prices of essential commodities. Though Irudya Rajan argues that this amount can take care of basic expenditure of the poor and the destitute elderly, it is difficult to subscribe to his viewpoint (Rajan, 2001). He is of the opinion that the average of pension amount in all the states comes to Rupees 150 and the total cost of food expenditure for a person if he is

procuring it through public distribution system is Rupees 126. And since consumption of an old person is less than that hence the elderly can easily manage with the old age pension and can, in addition, save some money as well for other expenses.

But considering that Rupees 150 he mentions is just the average and the amount varies from Rupees 60 to Rupees 300 in different states, the elderly of only a few states, where the pension amount is Rupees 150 or more than that, can manage with that amount. Moreover, the elderly in all parts of India do not obtain food through public distribution system. This makes it further difficult for the elderly to buy food with that amount. Again, if elderly is staying alone, then it becomes an impossible task to pay for house rent, water and electricity.

Hence the old age pension rate needs to be reviewed again and should not be less than Rupees 500 per month in any state or union territory. The government also spends 6% of its revenue expenditure on pension of government employees where as it is just 0.6% in case of NOAP and *anapurna* scheme (Rajan, 2001). With the absence of any other provisions for the social security of the destitute and needy poor, government must allocate more funds for it.

Further, the policy guidelines regarding the elderly promise a lot but barring a few, none of the other policies has been implemented till now. Most notable are the programmes relating to health care and nutrition, education of the elderly and their family members, moves to forge intergenerational ties, housing and shelter, protection of life and property of the elderly etc. Though the policy regarding financial entitlements lay down that the pension rate for the poor and destitute elderly will be reviewed in regular interval, it has not been done so far. The government of India must make sincere and concerted efforts not only to implement the programmes devised from time to time but also to launch new provisions for the improvement of situation of the elderly.

Perception towards government's policies

This section discusses the responses of the old age home residents of Orissa towards government policies on old age and the elderly. This study examines the awareness of the Old Age Home residents towards government policies, their opinion on applicability of these policies

and their experience of availing of these policies and also sought their suggestions on improvement of existing schemes and policies and suggestions for new schemes and policies.

The residents of the Homes were asked whether they held the view that the government should take care of the old people. There were 20 residents, who said they could not say whether it is government's responsibility to ensure social security of the elderly. One person did not think that government should take care of the elderly. The rest of the 34 residents were unanimous in their opinion that government must look after the needs of the elderly. As many as eight residents out of 13 respondents from the Christian run Homes could not say whether government should take care of the needy elderly.

Regarding awareness of government policies, 43 residents said that they knew about a few government policies. The rest of the 12 residents expressed their ignorance about the existence of any government policies. But when they were asked to enlist the policies they were aware of, only one person replied that he knew of pension scheme for the retired government employees. There were 10 residents, who had an idea about the *anapurna* scheme being run by the central government to provide free rice and wheat to the needy elderly. The majority of the residents knew about state old age pension scheme for the destitute. Those 16 persons out of 43 residents, who were aware of the state old age pension scheme, were availing of this facility. Unlike 16 resident from the government run. Homes, none of the residents from the Christian run Homes were availing of the state old age pension.

Regarding help and cooperation of the government officials, 14 residents found them uncooperative. But another seven residents replied that the government officials lent their helping hand when they approached them for either state old age pension or for *annapurna* scheme. The rest of the 34 residents had either no knowledge residents who found the government officials uncooperative and unfriendly cited the reason of corruption in government offices for the schemes not being implemented properly. The other half held that it was the bureaucratic hassles involved in applying and availing of the scheme that put them off.

Like 20 residents who could not say whether government should take care of the needy elderly, 39 residents could not say whether the policies and schemes of the government were adequate. Just five residents were satisfied with what government was doing to improve the conditions of the elderly. Another 11 residents of the Homes felt it to be insufficient to serve the cause of the elderly. One of them replied, "the government is doing nothing for us." But there was also a resident who thought that the government, in its capacity, was doing more than sufficient to improve the condition of the elderly. Similarly, a resident commented, "the government is like our parents who are taking care of people like us."

While asked to suggest improvements in existing scheme, just two residents came out with any suggestions. One resident talked about the need of providing national old age pension for all the destitute who neither had means to support themselves nor did have anybody to turn to. Another resident thought national old age pension should only be provided to the needy elderly. But many residents from both types of Homes came out with suggestions when they were asked what new schemes they wanted to see implemented for the elderly. While seven residents thought that there should be more grants for the destitute elderly, six residents felt food, medicine and clothing should be provided to all destitute irrespective of whether they stayed in Homes or stayed in any other place. As many as four residents wanted free housing or land for the needy elderly. There was one resident, who wanted the government to provide ration cards to avail of food from public distribution system (PDS). A couple of residents spoke of increasing the amount of state old age pension. While one thought it should be hiked from Rupees 100 to Rupees 150, another resident felt that a minimum of Rupees 200 should be fixed as the pension amount.

Finally, the resident's opinion was solicited for general improvement in the conditions of the elderly. The majority of the respondents did not offer any suggestion. Those four residents who suggested, their suggestions pertained to the affairs of the Homes. There were three residents, who felt more grants must be released to the Homes for the destitute so that there would be better accommodation, good food and medical facilities at the Homes. Another person spoke in favour of trained staff in the Homes, as they would build up a good environment at the Homes developing better

relationship not only among the residents but also between the residents and the staff.

The residents of the Home displayed striking ignorance about the government schemes and policies to improve the condition of the elderly. This was probably understandable considering that many of them were not literate or were not much educated. Moreover, most of them were in unskilled private sector jobs. So they had limited exposure to government schemes than the government employees did. One of the resident said, "I am already 70. I do not know if I will get it or not. So did not try old age pension". Also the residents were found to be quite disinterested in the programmes to ameliorate their living condition. It could be summed up in the words of a respondent who said, "old age is itself a disease. What can you do about it?"

Conclusion

The paper discusses the government provisions for the social security in old age such as pension scheme for the central and state government employees, the contributory provident fund for those who are not covered by the pension scheme, the old age pension for the destitute and the *annapurna* scheme for the destitute elderly. The paper also outlined the legal provisions initiated by the government of India since independence meant to ensure financial security to the elderly parents. The salient features of the National Policy for Older Persons formulated in 1999 to ameliorate the condition of the elderly was discussed with emphasis on its principal areas of intervention such as financial entitlements, health care, family, shelter, food and nutrition and education.

The evaluation of the provisions leads to the inference that the government provisions for the social security of the elderly in organized sector is sufficient to cater to needs of the elderly. But the government has lagged behind in framing appropriate schemes for the vast numbers of the elderly in the unorganized sector. Since it goes without saying that the people working in the organized sector far outnumber the people employed in the organized sector, the government must initiate programmes so that elderly persons coming out of unorganized sector will have a financially secure old age.

The old age pension and the *Annapurna* scheme for the destitute elderly are serving its purpose to cater to the poor elderly. Since its

inception, the old age pension has succeeded in reaching out to a vast number of elderly. But the amount of pension fixed per month needs urgent reviewing, as it is insufficient to meet the basic requirements of the poor elderly. The government has also failed to carry forward its proposed plan of action regarding shelter, education, forging intergenerational ties and health care of the elderly as laid down in the National Policy for Older Persons.

The responses of the Home residents of this study show that not only are they not aware of the government provisions meant for them but also showed not much enthusiasm in the programmes. Barring a few, who have made use of old age pension, most of them have not availed of any of the government schemes. This lack of awareness can be traced both to their illiteracy as well as the inability of the government to make its schemes known. The corruption and bureaucratic hassles in the government offices are also reasons for the elderly to lose interest in applying for the provisions. The government must make efforts not only to popularize its schemes but also ensure transparency in the implementing offices and make the application procedure simple and hassle-free.

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Health Concerns for Grandmother Raising Grand Children in Cultural Contexts of USA

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ABSTRACT

Being a full time grand parent has different cultural meaning in the individualistic U.S. society as compared to family oriented Indian society. Compared to the situation in India, raising grandchildren without the support from biological parents is a more common phenomenon in U.S. society. Intergenerational households are uncommon in U.S. resulting in the loss of social support that can exist just because of co-residence for biological parents. Juvenile Justice law in U.S. provide for terminal of parental rights if parents are determined to be not fit to raise children by themselves. Common with the Indian culture, the woman, usually the grandmother steps in to assume the responsibility of raising the grandchildren when biological parents are unable to do so. Aging and role changes coupled with the problems that children bring often times negatively affect the health of grandmothers acquiring full-time responsibility of raising their grandchildren. This paper examines theories and empirical literature explaining reasons why older women take on the responsibility of full time care giving for their grandchildren even at the risk of negative health outcomes for themselves. Implications of this literature review for assessment of health care needs of such grandmothers and interventions to improve their health with a focus on meeting the care needs of children are discussed. Two major suggestions for interventions include having a repertoire of interventions that match specific needs of individual grandmothers

and having an alternate caregiver included along with the grandmother.

Keywords : Grand mothers, Grand parents, Cultural context, I Care.....

Health concerns for grandmothers raising grandchildren in cultural context of USA

From my perspective as an Indian middle-aged woman professional, grandparenthood is something that aging parent look forward to in India for several reasons. Two of the most important reasons that come to mind are continuation of family name and an opportunity to spend the time in retirement with their grandchildren. Indian families have problems similar to families in U.S. but in the family oriented Indian society, the joint and extended family steps-in to provide positive environment for the children as well as care for the biological parents with problems. The biological parents try to and are encouraged to do as much as they can for raising their children under the watch of the family members. It is only when both biological parents die that grandparents or other extended family members may assume the full responsibility of raising the orphaned children.

In U.S. Society, the children are encouraged to leave home when they turn 18, either to go to the University or enter the job market. One can become a target for sarcasm and fun-making when living in one household with parents. Most systems (e.g., Health care) recognize parents and their children as household units only till children reach a certain age. Nuclear family life style is a norm, and therefore when young parents have problems that prevent them from caring adequately for their children, they do not have the support through the presence of other adults in the household. If biological parents cannot resolve their problems that interfere with appropriately raising their children in a timely manner, they can face termination of parental rights by the legal system. The extended family members, most commonly grandmothers or grandparents (if grandmothers are married) then step-in and assume the full-time care-giving for these grandchildren. Like the Indian society, women are considered natural nurturers and caregivers in the family.

When parents have problems and are unable to provide adequate care for children, the health of children is affected. For the purpose of this paper, health includes physical, mental, emotional, and behavioral

dimensions. Longer the children have remained in such situations, deeper and intense are their health problems. So when grandmothers assume full time care-giving for these children, they face challenging tasks of undoing some of these effects on health of children and dealing with the stress associated with it. If grandmother herself has a chronic health problem (including mental, emotional, and behavioral health) then this stress can exacerbate her condition. The dyad (grandmother-grandchild) can pose challenges to each-other as well as bring much needed resources for maintaining and regaining good health. The ratio of challenges and resources generally determine the health status of this dyad.

According to Roe and Minkler (1998/99), between 1980 and 1990, the number of children living with their grandparents increased about 44 percent in USA. The authors further report that close to 4 million children or 5.5 percent of all children in the United States lived in a household headed by grandparent by the year 1997. Nationally, a typical grandparent raising a grandchild is a white married woman living above poverty line (Roe and Minkler, 1998/99). A report of a global survey published by United Nations Department of Economics and Social Affairs/Population Division (no date) comparing data on living arrangements of older persons in more than 130 countries states that in 1998/99 in India, 81.4 percent of older adults lived with their child or a grandchild, of which 1.8 percent lived with a minor grandchild exclusively, implying that the older person could be the primary caregiver of this child. The same report states that in 2000 in USA, only 16.3 percent older adults lived with their child or grandchild, of which 1.5 percent were primary caregivers for their grandchild. This statistics implies that when living in USA and living with a grandchild, the older person is more likely to be the primary caregiver of the child as opposed to India where if living with grandchild, the child is most likely to be the caregiver of the older adult.

Next, I examine the factors that lead to the grandparent households and theories that explain this phenomenon based on the literature available about the United States, along with a commentary comparing and contrasting it with my perspective of the Indian situation.

Causes for Grandmother-Headed Households

The causes for grandmother-headed households can be classified under three areas: biological parents related factors, societal values, and grandmothers related factors. Common factors repeatedly found in the literature (e.g., Hayslip & Goldberg-Glen, 2000, Jendrek, 1994) preventing the biological parents to raise their children appropriately are substance abuse by one or both parents, divorce, teen pregnancy, single-parenting, HIV infection in one or both parents, incarceration of mothers, and poverty. These problems not only divert the attention of the parents away from caring for the child, but also alienate them from friends and families who probably can assist them in fulfilling their responsibilities as parents. These social problems, coupled with the social isolation and a highly developed legal system for protection of children at-risk of harm often times result in children becoming the wards of the juvenile court. It is not that parents in India are not afflicted by the social problems listed above, but the Indian social structure is such that misfortune summons social support into action. The family, neighbors, and the community will move to help the family member (can be a grandparent) upon whose shoulders the responsibility of raising this children and dealing with the parents with problems will fall. Social problems in the family, as a rule, do not result into social isolation of the parents. Whether right or wrong, Indian society will hush the teen pregnancy, and in most cases, will give-up the child for adoption. Single-parenting occurs mostly when one of the spouses is rendered severely disabled or has died. Unmarried single-parenthood is a rare phenomenon in India. The children enter the juvenile justice system only when a police action is taken as Indian law does not have a citizen-reporting system or mandatory reporting of inappropriate parenting by professionals. For these reasons, a higher percentage of children are determined to need care outside of home in USA than in India.

Common to the societal norms in both countries, generally care giving responsibilities are expected of a woman in the family, and women in the family of the mother of the children are expected to take over these responsibilities over those of the father. The situation is changing rapidly in U.S. society. Single men headed households are on the increase but that trend is not yet visible in grandfather being the sole full time caregiver for his grandchild.

Grandparents and more specifically grandmothers have already raised their own family, and are looking forward to once again focus the life on their own well-being and pursuing interests. They look forward to spending quality time with their grandchildren without the primary responsibility of raising them. Aging process becomes more evident and most grandmothers face aging related health problems. Becoming parents once again may not be in their best interests. So why do grandmothers choose to become parents to their grandchildren when approached by the biological parents or the legal system?

Hayslip & Goldberg-Glen (2000) discuss four major theoretical responses to this question: Family Solidarity, Socio-Emotional Selectivity, Historic Family Events, and Kinship Care Policy. Solidarity theory states that in the wake of family breakdown, grandmothers feel that they must take responsibility to keep the family together even when they may not be physically or mentally fit to carry it out. Socio-Emotional Selectivity theory states that grandmothers perceive raising the vulnerable and neglected or abused grandchildren as emotionally gratifying experience. Grandmothers are motivated to assume full time care of their grandchildren for emotional satisfaction even when they may not be physically or mentally fit to do so. In my opinion, these theories are also applicable to Indian grandmothers, if they ever faced the decisions that some grandmothers in U.S. have to face. Historic family events theory states that a good act is committed to retribute the past deeds. When grandmothers believe that they did not raise their children adequately, and that has caused their problems, they assume full time care of their grandchildren to remedy their past deeds. Kinship care policy is specific to U.S. and its legal system of child protection. This policy dictates child protective services to make efforts to keep abused and neglected children in their familiar environment and within their extended family before they can be placed with strange foster family. This has resulted in more grandparents thrust upon with the responsibility of caring for their grandchildren (Jendreck, 1994).

Impact of Full Time Parenting on Grandmothers

Research suggests that aged grandmothers (60 years+) are likely to suffer from at least one chronic health conditions like type II diabetes, hypertension, osteoporosis, arthritis, low level of energy, stress-related disorders, mood disorders, elevated depression or

anxiety, and such (Kelly & Whitley, 2003). The authors also found that these conditions were found to be occurring at a higher rate in full time care giving grandmothers. Research has consistently found correlation between grandchild related factors and health conditions of the grandmothers. According to Dowdell (1995), most influential factors are age of the grandchild, number of grandchildren cared for, and physical, emotional, and behavioral health of the grandchildren. Grandchildren who have been exposed to substances in uterus and in their lived environment exhibit irritability, mood swings, and physical ailments and are difficult to care for. Neglected and abused grandchildren manifest emotional problems and depending on severity and length of such experiences, they can manifest behaviors from being unruly, defiant, and destructive to setting fires. These children also fear intimacy and love as they have learned to equate these with abuse and pain. These children do not easily bond with grandmothers. If the move to the grandmothers' has been necessitated because of the death of the biological parent, grandchildren can be very demanding and need to be comforted for long period of time. These conditions pose challenges to grandmother and cause stress, which in turn result in acute episodes related to their chronic conditions. Management of their own health becomes poor in face of these challenges (Dowdell, 1995).

Kelly & Whitley (2003) propose that personality and other characteristics of grandmothers can play an influential role in exacerbating or reducing the emotional and behavioral problems of grandchildren. Grandmothers who have low level of energy, who are stressed, have chronic illness requiring regular monitoring, and have emotional or mood-related disorders can add to the challenges faced by grandchildren in dealing with their unpleasant and painful life experiences.

Grandmothers face predicament whether to give priority to self-care or care of the grandchildren. They also face generation gap in terms of choice of music, books, and films to watch, language to use, views about treatment of elderly, relatives, going to the church and so on. Even though belonging to the same family, generational identities can be very different (Baird, 2003; Jendrek, 1993, 1994; Kopera-Frye & Wiscott, 2000). If grandchildren rebel, argue, or bad mouth when such conflicts arise, grandmothers can experience a crisis in

maintaining their self-esteem. Most grandmothers of this generation have grown among patriarchal forces and have struggled to maintain their self-esteem throughout their life (Fuller-Thomson & Minkler, 2000; Kopera-Frye & Wiscott, 2000). In U.S., most grandmothers have their set life-style. Taking in a child upsets their life-style and routines to accommodate her or his needs. This takes its own toll on these aging women.

Another important factor that can throw these older women out of gear is the role identity, role confusion, and role conflict. Even if they might have cared for their grandchildren from time to time, they were their loving grandma. Now they have to take on the role of parenting these children requiring transition from sweet old grandmother to loving but disciplining parent. Most grandchildren resent this changed identity of their grandmother. Playing such 'time-disordered' roles can cause stress symptoms in these women (Hayslip & Goldberg-Glen, 2000; Roe & Minkler, 1998/99; Williamson, Softas-Nall, & Miller, 2003).

Though Indian grandmothers may find similar difficulties in raising grandchildren affected by parental problem-behaviors and actions; their task is made easier by the intergenerational household – meaning living in a joint family, where they have continuous social support and their responsibilities get distributed among other family members. Other family members help when Indian grandmothers experience health problems or difficulty in fulfilling their tasks. Contrary to this, the individual oriented culture of U.S. alienates such older women from their social network. If they were regularly going to the church meetings, or having outings with their friends, or attending Bingo nights, now they have to alter their plans to accommodate the schedules of their grandchildren. Grandmothers may begin missing out on these activities and gradually fade from being part of these social groups. Such groups will move on without them. Other family members, if living near by may help out occasionally but most prevalent attitude will be “you took on the responsibility, now you carry it out.” In many cases, other family members may not be living within daily drivable distance.

In addition, the social service system in the lives of these grandmother-grandchild dyad is most commonly a part of the child welfare system, and their priority is to provide education, training, and

services to grandmothers to make them better care givers of the children. These programs generally ignore the on-going needs of the grandmothers. Recently researchers (e.g., Dowdell, 1995; Hayslip & Patrick, 2003; Kelly, 2001) have studied the care-giving burdens on these women and recommended respite programs for them where they can take some time off for themselves. However, these are short-term programs that do not assess or provide services to the grandmothers in the dyad with on-going services for themselves.

It is imperative that I state a caveat here that both U.S. and India are diverse societies, and these general presentations of facts may apply more to one group of people than the other. There also may be differences in urban and rural situations.

Social Services Planning in U.S.

Since full time grandmother care givers are a phenomenon mostly created through child welfare system, the question guiding planning of social services for these grandmothers is usually: "How may grandmothers' protective factors be enhanced to promote resiliency and total well-being of children in their care?" This has resulted in services for the grandmothers to help them learn parenting skills, respite programs if they get overwhelmed, treatment options for children, and so on. Based on the discussion so far, it can be agreed that planning of the services for the grandmothers also needs to be guided by the question: "How may the grandmothers' with chronic condition be assisted to maintain their physical, mental, emotional, and behavioral health if they undertake the responsibility of full time care giving for their grandchildren?" This may result in designing services like health case-manager, using grandmothers' full-time care giving as transitional, involving other healthy adult to share in the care-giving, counseling services for grandmother for the issues she may face in raising a child with multitude of problems, building social support for her, preventing her alienation from previous social network of her peers, and so on. Having an alternate care plan for grandchildren put in place in case the grandmother has to give up full time care giving because of their own health concerns may be in optimal interest of both parties in dyad. It is interesting to note that Nelson & Nelson (1998) discussed the virtues in multigenerational households. Building a multigenerational household to care for needy child and aging grandmother is definitely a possibility of service outcome.

Implications for International Education for Health and Human Services Professionals

It is a well-established fact that needs for health and human services are greatly impacted by the cultural contexts of the societies. What may be considered as a social problem to be addressed in one society may not be perceived as such in another society. As made very clear by the numbers reported earlier in this paper, most grandmothers in U.S. are likely to live in individual households without the presence of their children or grandchildren as opposed to in India. Raising a child is a family responsibility in Indian society as opposed to U.S. In this era of global interdependency, migration across national boundaries is becoming frequent, necessitating that we educate professionals in health and human service disciplines about varied cultural contexts within which social problems get framed. Urban India is rapidly changing under the influence of western ideas. This type of information has a potential to promote informed change processes within urban societies of India and development of service structures that are responsive to these change processes.

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Awareness, Accessibility and Utilization of Health Care Services by Elderly in a Rural Population of Northern India

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ABSTRACT

Better medical care and decreasing fertility in India have made elderly the fastest growing section of society and more than four-fifth of them are living in rural areas. This study was carried out on 354 elderly from sub-centre villages of a block – level primary health centre at Daurala, Uttar Pradesh. Findings of the study reveal that all the subjects were aware of the private practitioners in their area while the knowledge about other facilities was less, although more of them recalled their knowledge about the government dispensaries and government hospital in the area when enumerated specifically. Almost all of them were attending government hospital for operative, investigative and rehabilitative services.

Keywords : Health care, Geriatric care, Geriatric health.

Reduced death rates in early life and increased use of contraceptive method reducing birth-rate has resulted in increased proportion of elderly population in the society. The increasing number of elderly persons above 60 years of age need resources and attention from the society. It is estimated that for the care and management of an average elderly patient, more than two times the amount of finance is required when compared to an average younger patient and the average stay of an elderly in hospital is also proportionately more (Kasliwal, 1986). By any conventional yardstick of health or illness,

there are very limited services for the elderly. Health services in the country are organized and financed to deal primarily with acute illnesses. Hence the heavy emphasis on inpatient care, episodic treatment and specialized facilities. Care of the elderly patient with chronic conditions does involve acute care but mostly it requires services that emphasize out of hospital care, continuous monitoring and coordination of medical with support services (Moudgil, 1986).

Although India has established a wide network of primary health centers in rural areas, they are still incapable to serve the underprivileged elderly population due to lack of awareness and difficult accessibility in emergency conditions. This study is aimed to assess the knowledge regarding the availability of services and their utilization by these elderly.

Material and Methods

The present study was carried out at block-level Primary Health Centre Daurala, Meerut which, also is Rural Field Training Centre of the Department of Community Medicine, L.L.R.M. Medical College, Meerut. It covers the area by a network of 24 sub-centres.

For the purpose of study, 355 elderly people aged 60 years and above derived on the basis of morbidity prevalence rate of 52 per cent as per reports of National Sample Survey Organization, 1998 (NSSO-1998) with 95 per cent confidence interval and a relative precision of 10 per cent were covered. To cover the sample 15 elderly people aged 60 years and above from each of the 24 sub-centre villages were included by house to house visit starting from a random point. A predesigned and pretested performa was used to obtain information by personal interview with each subject.

Results and Discussion

Maximum number of elderly studied were in the age group of 65-69 years (29.8%) while 15.0% were old-olds that is 80 years and above. The females (52.8%) outnumbered males (47.2%) and widows (20.2%) were higher than the widowers (12.9%). Majority (58.1%) of the elderly were financially dependent and nearly two-fifth (38.2%) of them were in low socioeconomic class. A similar finding was reported by Nalwa (1978) and Kumar (1993).

Health facility awareness

It is evident from Table-1 that all the elderly were aware about the private practitioners (100.0%) while only 57.6% and 64.1% of them knew about government dispensaries and government hospitals in the area on first response although a considerably high percentage of elderly recalled their knowledge about the government dispensaries (80.2%) and government hospitals (88.7%) in the area when enumerated specifically which may largely be due to accessibility and frequency of utilization.

Table-1 : Awareness of available health facilities (Multiple response)

Health Facilities	First response		Provocative response	
	No.	%	No.	%
Nursing home	99	27.9	201	56.7
Pvt. Practitioners	354	100.00	3540	100.00
Govt. Dispensary/ Health Centre	204	57.6	284	80.2
Govt. Hospital	227	64.1	314	88.7

Accessibility of Health Facilities

Accessibility of various health facilities clearly explains the difference in awareness response, being better accessibility of private practitioners (99.1% within 1 Km) than government hospitals and government dispensaries (59.3% at more than 3 Kms.) (Table-2).

Table-2 : Distance of health facilities from home

Distance	Private Health facility		Govt. Health facility	
	No.	%	No.	%
< 1Km	351	99.1	18	5.1
1 – 3 Km	1	0.3	126	35.6
3 – 5 Km	2	0.6	143	40.4
> 5 Km	0	0	67	18.9
Total	354	100.0	354	100.00

Utilization of Health Services

Emergency services

Table-3 : Utilization of Emergency Services

Emergency Services	No.	%
Private Practitioner	344	97.2
Nursing Home	4	1.1
Govt. Hospitals	6	1.7

Table-3 shows that most of the elderly (97.2%) availed services from private practitioners in emergency and only 1.7 per cent availed it from government hospitals in contrast to the findings of Pradhan *et al.* (2000) in an urban area where 60.87 per cent visited government hospitals. Better accessibility of private practitioners in an emergency within 1 kilometer may be the main reason for availing emergency services from private practitioners in comparison to government hospitals.

Operative investigative and rehabilitative services

Utilization of government hospitals for the purpose of Operative, investigative and rehabilitative services were 66.4, 60.5 and 76.0 per cent respectively as reported by Pradhan *et al.*, (2000) being 73.91, 59.13 and 71.74 per cent respectively (Table-4).

Table-4 : Utilization of health facilities for operative, investigative and rehabilitative purposes

Health Facilities	Operative Services		Investigative Services		Rehabilitative Services	
	No.	%	No.	%	No.	%
Private Hospitals	119	33.6	140	39.5	85	24.0
Govt. Hospital	235	66.4	214	60.5	269	76.0
Total	354	100.0	354	100.0	354	100.0

Higher utilization of government facilities for Operative, investigative and rehabilitative services may be due to cost factor as these services are relatively cheaper or free comparison to private facilities.

Conclusion

There is a wide gap between the awareness/ knowledge of private practitioners and government health facilities within the area and similar is the condition in availing the services of health facilities in

medical emergencies, the main reason being the unmediated accessibility of private practitioners in emergency. Still majority of elderly subjects preferred to avail government health facilities for operative, investigative and rehabilitative purposes. So need of the hour is to establish the specialist geriatric clinics at all the primary health centres with support of mobile medical care units to help reduce the problem of accessibility for rural and remote elderly population.

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Population Ageing Trends in Nepal

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ABSTRACT

Although population ageing is now regarded as a worldwide priority, research in this field is just beginning in Nepal. Elderly population is increasing both in terms of absolute number and as a proportion of total population in Nepal but on the other side traditional family supportive norms and values to elderly are constantly eroding. So, elderly population will be one of the most neglected groups of population in the society if due attention is not paid to address this particular issue in time by the government and non-governmental organizations as well as civil society. The main objective of this paper is to briefly provide a scenario of population aging in Nepal through the experience of the researcher of his own and through the secondary data obtained from census and surveys and other published sources.

Keywords : *Ageing, Ageing trends, Nepal.*

Population ageing is now recognized as a global issue, which has important implications in the health care system and social policy. However, these issues remain relatively under-researched, particularly in poorer countries, where there is a dearth of specific initiatives at the international level (Lloyd-Sherlock, 2000).

Since the International Plan of Action on Ageing was adopted by the UN in Vienna, Austria in 1982, concern on the study of the elderly population has increased. The United Nations International Year of Older Persons, in 1999, called for creating a society for all ages. The Second World Assembly on Ageing was held in Madrid, Spain in 2002 and it has disseminated that the key issue is old people and it has

outlined an action plan in the assembly at national and regional levels to increase awareness of ageing issues and develop concrete plans of action for ageing.

The study of an elderly population is in initial phase in Nepal. No single nation-wide survey has been conducted on elderly issues so far and most of the studies done in the past are based on the limited information available from census and surveys conducted for other purposes (Subedi, 1998).

In Nepal, a population over 60 years of age is considered elderly. According to 2001 Population census of Nepal, there are 1.5 million elderly inhabitants in that country, which constitutes 6.5 percent of the total population. During 1991-2001, annual elderly population growth rate was 3.39 percent, quite higher than the annual population growth rate of 2.3 % (CBS, 2003). Nepal is facing a problem of high population growth rate and also introducing population control programs, which has clearly shown a recent decline in fertility (Retherford & Thapa, 1998) and will soon result in an even greater proportion of elderly individuals.

In this paper I am trying to focus on the Socio-demographic situation of elderly and living arrangement of elderly based on the 2001 census data, which is collected from the various published sources.

Demographic Situation of Ageing

Fertility, early mortality and life expectancy are closely related. Control over unwanted births and early mortality has led to a greater probability that those newborn will live longer and longer. This is the mechanism linking the well-known process of demographic transition of population aging, which consists of a decline in the number and proportion of young people and a parallel increase in the number and proportion of old people.

In Nepal, during 1950s Life expectancy was quite low (around 27-28 years) due to high fertility and high infant mortality rate, but continuous decrease in the fertility rate and the infant mortality has led to increase the average life expectancy. Consequently during second half of 20th century (1952/554- 2001) the life expectancy has increased by more than two folds (from around 27 to 60 years).

Table 1: Declining Fertility and Mortality and Increasing life expectancy

Year	TFR size	IMR	CDR	Life expectancy Male		Family Female
1952/54	-250-260♣		36.7	27.1	28.5	5.4
1961	-	-	27.0	37	39.9	5.3
1971	6.3	-	21.4	42.1	40.0	5.5
1981	6.3	117	13.5	50.9	48.1	5.8
	1991	5.6	97	13.3	55.0	53.5
5.6						
2001	4.1	64.4	9.6	60.8	61.0	5.4

Source: MOPE, 2002; CBS, 2003; CBS: 2004.

TFR : Total Fertility Rate, IMR: Infant Mortality Rate, CDR : Crude Death Rate

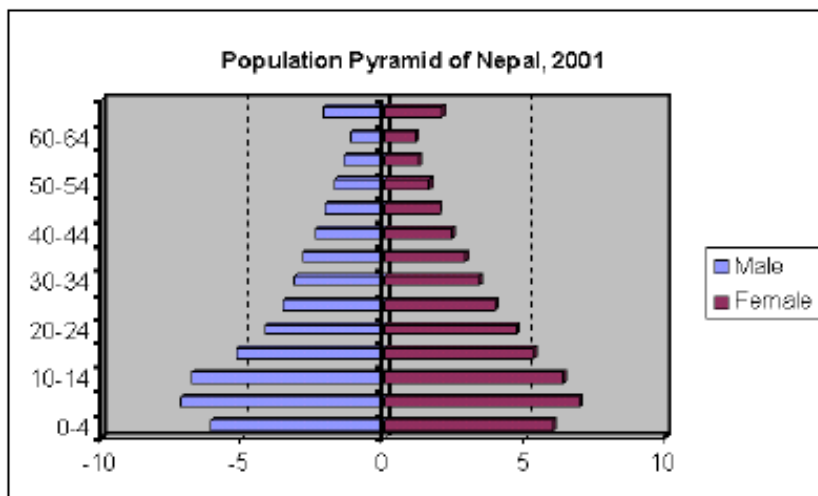
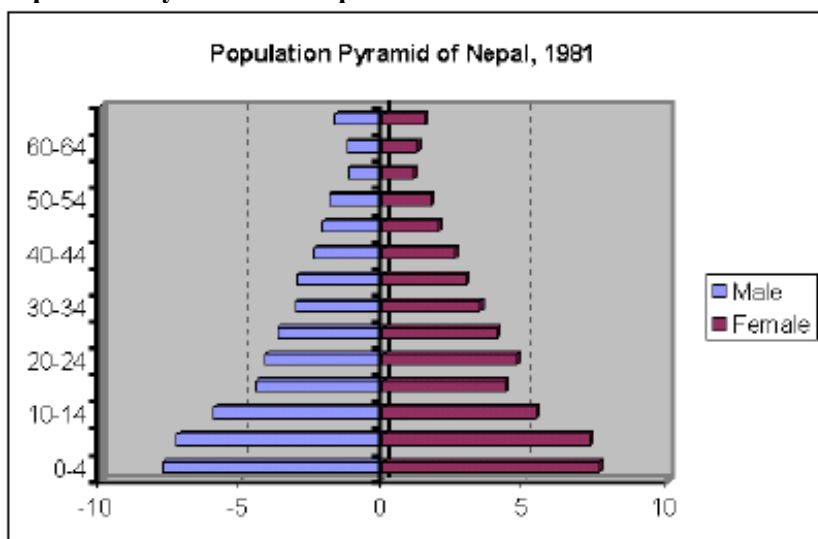
♣ For female 250 and for male 260 per thousand live births.

Conventionally, there are two process considered to be involved in population aging, i.e, aging at the base and aging at the apex of the population. Former results from a decline in fertility; and later , mortality reduction among the elderly. According to Ogawa, the main cause of population aging in the Asian countries is decline on fertility rather than decline in mortality. However, if the recent trends in mortality improvement continue in these countries, mortality at advance ages will fall substantially in the relatively near future, thus contributing to population ageing as a major source (Ogawa, 2003). In Nepal, fertility decline and decline in the mortality of elderly are both recent phenomenon.

Internationally Nepal is recognized as one of the exceptional country in the world where men outlive women (Cockermam, 1997). Nutritional deprivation and lessened access to medical care (Martin: 1998), socio cultural values, norms, taboos that give priority to son are among the possible reasons for this reversal of usual female

superiority in life expectancy. But recent data shows that Nepal is no longer exceptional in this 21st century.

Population Pyramids of Nepal



Population pyramid is regarded as one of the best way to depict the age and sex structure of population. These two pyramids of 1981 and 2001 clearly show the sign of changing age structure of the population. Population of the base population has started to shrink due to decline in TFR in the recent decades.

Demographic transition has important implications in the changes in the family and household. If we analyze latest three censuses, the household size has decreased from 5.8 in 1981 to 5.6 in 1991 and 5.4 in 2001. This is the indication of family nucleation in Nepal with the increase of life expectancy. But the studies in other countries have shown that the household size increases with the increase in the life expectancy, and there exists some kinds of demographic lags to reduce the household size in spite of declining fertility trend (Kono, 1998).

Index of aging and median age of population

Demographers use the Index of aging and Median age of the population as an Index to measure the population aging. Based on this index a population may be described as young if the index of aging is under 15 percent and old if its value is over 30 percent. In the same way a population may be described as young, intermediate and old if the median age lies under 20, between 20 and 29 and over or equal to 30 years respectively (Shryock & Siegel, 1976).

Table: 2 Index of aging and Median age of population

Census year	Index of Aging			Median age		
	Male	Female	Total	Male	Female	Total
1971	13.20	14.75	13.86	19.80	20.70	20.30
1981	14.08	13.51	13.81	19.50	20.30	19.90
1991	13.56	13.80	13.58	18.41	19.40	18.92
2001	16.32	16.70	16.51	19.71	20.47	20.08

Source: Population Monograph of Nepal, 2003, pp 80.

From the table 2 we can see that both index of aging and median age are increasing in Nepal. It shows that the population of Nepal is moving slowly from young population to old population. The increase in the Index of aging as well as median age is quite significant in between 1991 – 2001 censuses. On the coming days the index of aging and median age seems to increase more due to transition on fertility in the recent decades as well decline in over all mortality too.

Situation of elderly population growth

Table: 3 show the total population of elderly, percentage of elderly in the total population and growth rate of both the elderly and

total population. A comparison of size and growth rate of elderly population with the national population suggests that both these populations have been increasing consistently over the past 5 decades. The total population of the country (not shown here) has increased by 180 percent while the total elderly population has increased by 267 percent during the last 5 decades from 1952/54 to 2001. One thing, which is obvious from above table, is that the growth rate of elderly is always higher than the total population growth rate. If this elderly population growth rate remains constant in the coming days, present population of elderly will double in 20* years. Due to the possibility of further decline in the fertility rate in the coming years the elderly population seems to increase rapidly and present size of elderly will double even before 20 years.

Table 3: Population growth rate and elderly population growth rate

Year	Elderly Population	Population growth rate		Percent of elderly (60+)		
		Total	Elderly	Rural	Urban	Total
1952/54	409,761	-	-	-	-	5.0
1961	489,346	1.65	1.79	5.22	5.23	5.2
1971	621,597	2.07	2.42	5.63	5.12	5.4
1981	857,061	2.66	3.26	5.74	5.11	5.7
1991	1,071,234	2.10	2.26	5.95	4.99	5.8
2001	1,504,311*	2.24	3.40	6.6	5.7	6.5

Source: *Population Monograph of Nepal, 1995 and 2003. CBS: 2002.*

* Estimated from the adjusted total population of 23,151,423 of 2001 census.

Table 3 also presents the picture of the proportion of elderly living in the urban and rural area. Like many other Asian countries, many elderly of Nepal are living in rural area than in urban area both in terms of size and proportion. The possible cause for this in Nepal may be the high migration rate of adults from rural area to urban area.

Sex composition of Nepalese elderly

Generally sex ratio is used to measure the sex composition of population. Here sex ratio refers to the number of males per hundred females. Table 4 shows the sex composition of the Nepalese elderly

according to different census. We can see the increasing sex ratio trend till 1981 and decreasing there after. The previous three censuses (1952/54, 1961, 1971) shows the dominance of women in the elderly population but in the later three censuses (1981, 1991, 2001) dominance of male is seen. Dominance of elderly male in the latest census in Nepal is just reverse what we have seen in developed countries and many developing countries 'feminization of latter life'. The usual sex ratio pattern favoring females occurs at 75 years in the case of Nepal. We can also see the quite different composition of elderly population in urban and rural area. In the urban area we can see the dominance of women but dominance of men in the rural area in every age group before 75 years.

Table 4: Sex ratio of elderly in Nepal

Year	Age Group				
	60+	60-64	65-69	70-74	75+
1952/54	80.2				
1961	83.3				
1971	92.1				
1981	111.1				
1991	102.7				
2001	101.7	101	103	107	96
2001 Urban	93.9	99	94	96	84
2001 Rural	102.8	102	104	109	98

Source: Population Monograph of Nepal, 2003 & 1995.

Marital status of elderly

Marital status is an important determinant of where elderly reside, of their support system, and individual well being. Elderly in intact marriages tend to enjoy higher levels of survival and better mental health, utilize more health services, have more social participation, and have a better life satisfaction than those who are without partner (UN: 1994).

Table 5: Marital Status of elderly in different censuses

Marital Status/Sex	1961	1971	1981	1991	2001
Married					
Male	73.17	78.95	80.82	79.39	88.30
Female	32.13	44.38	61.04	49.17	71.70
Never Married					
Male	0.98	1.07	7.83	1.29	1.40
Female	0.45	0.62	6.24	0.89	1.20
Widowed					
Male	24.50	19.68	10.92	18.24	9.40*
Female	65.73	54.65	32.07	47.54	25.10*
Divorced/ Separated					
Male	0.39	0.30	0.43	0.56	
Female	0.24	0.36	0.65	1.05	

** The data also includes divorced and separated*

Table 5 shows the marital situation of the Nepalese elderly from different censuses. We can see from the table that there is always higher proportion of married elderly males compared to married elderly women. In 1961 only 73.17 % male and 32.13 % women were married, which has increased to 88.30 percent for male and 71.70 percent for women. The lower proportion of married elderly women may be due to society's strict prohibition for the widow remarriage as well as culturally male's tendency to marry a younger woman than them self. In the Nepalese culture widowed remarriage is acceptable.

The proportion of never married (single) elderly is quite low; it may be due to the prevalent universal marriage system in the society. Many parents think that children's marriage is their responsibility too. Still, arrange marriage system is very common in Nepal.

The proportion of elderly widow was very high (65.73 %) in 1961, which is decreasing consistently and reached around 25 percent in the 2001 census. The very high proportion of elderly widow in the past may be due to the prevalent child marriage system and cultural restriction of widow marriage among a large majority of population.

The proportion of divorced and separated is not significant in Nepal; it may be due to the prevalent social custom and values as well as illiteracy in the society.

Literacy situation of elderly

According to census definition a person is said to be a literate if s/he can read and write and can solve a simple mathematical problem of daily life. In table 6 and 7, we can see the literacy situation of elderly in Nepal. Still many elderly are found to be illiterate but illiteracy is found to be more common for the elderly women than elderly men.

Table 6: Literacy situation of the elderly

Age	1981 (%)			1991 (%)			2001 (%)		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
60-64	10.2	16.1	3.8	13.6	24.0	3.1	18.78	31.90	5.48
65+	10.5	16.4	3.9	14.3	24.5	3.5	15.64	27.00	4.07

Source: Shrestha and Satyal, 2003.

According to 2001 census more than 83 percent of the elderly are illiterate. Even those who are literate, about half (47.3 per cent) have not received any formal education (Chaudhury, 2004). The literacy rate for elderly aged 65 and above is found as 15.64 per cent, which is 27.0 per cent for males, and 4.07 per cent for females respectively. But for the districts of Kathmandu valley, the literacy situation is quite different than those for all Nepal. Among three districts of Kathmandu valley, Kathmandu has the highest literacy rate (86 %). Compared to men elderly women are found to be more disadvantageous position in the education in Kathmandu valley too.

Table 7: Literacy rate (%) among aged 65+ years by sex, districts of Kathmandu valley, 2001.

Sex	Kathmandu	Lalitpur	Bhaktapur	Nepal
Male	86.36	86.36	80.84	27.00
Female	66.44	60.26	59.38	4.07
Both	77.07	70.77	70.30	15.64

Source: Singh, 2004

Situation of Pension and Old age allowances

For older people, pension is a key element of social security. Pension is a safe income for the rest of the life after retirement. Nepal government provides pension for the government employee. It is provided to civil servants, military, police and teachers. The standard

retirement age is presently 58 years for the civil servants. But in universities, the retiring age of teachers and administrator is 63 years. For lower rank of army and police it is 46-48 years.

The table below shows the total number of pensioners from different sectors. Highest number of pension recipients belongs to Army followed by police and civil servants. Elderly use such a pension for daily living, medicine and religious work etc. (Shrestha and Satyal, 2003). Only very small proportions of elderly (less than 7 per cent) are found benefited from this system.

Table 8: Number of pensioners in different sector

Sector	Year	Number
1. Civil Servants	July 2002	28542
2. Police personnel	July 2002	20497
3. Army		
a. Personnel	July 2002	30166
b. Family	July 2002	6198
4. School Teachers	July 2003	8334
5. Tribhuvan University	July 2003	1200
6. Constitutional Bodies	July 2002	107
7. Palace and others	July 2002	448
8. Banks		
a. Nepal Rastra Bank	July 2003	1707
b. Rastriya Banijya Bank	July 2003	630
9. Corporation		
a. Nepal Electricity	July 2003	1332
b. Nepal Telecom. Corporation	July 2003	558

Source: *Shrestha and Satyal, 2003.*

In 1995, the government of Nepal introduced a pilot scheme, for people aged over 75 in five districts. The scheme was extended to cover the whole country in 1995/1996 fiscal years. To start with, the amount paid to each beneficiary was 100 Rupees per month. This was increased to 150 Rupees in 1999 (Rajan:....). This program also includes widow of 60 years age and above and handicapped disabled

over 16 years. Although the amount paid to the elderly above 75 years and widow above 60 is very small, but it is quite popular in Nepalese elderly. Small, regular payments to older people can improve their health and social standing (Help Age International, 2004). All together more than 400.000 elderly are benefited from this scheme.

Table 9: Number of senior citizenship allowance recipients

Fiscal year	Senior citizen	Helpless widow	Disabled	Total
1995/1966	-	-	-	346874
1996/1997	-	-	-	368040
1997/1998	149502	160040	3198	312740
1998/1999	173834	203120	3645	380599
1999/2000	173529	208432	3641	385602
2000/2001	193477	227694	3667	424841
2001/2002	195449	229826	3696	428971

Source: Shrestha and Satyal, 2003.

Discussions and conclusion

Population aging is a poised to become a major issue in developing countries, which are projected to age swiftly in the first half of the twenty-first century. Developing countries will face the challenge of simultaneous development and population aging (UN: 2002).

Traditionally like in other south Asian countries, the responsibility for the welfare of the elderly lies with their children, and the state has virtually no obligation to provide care for the elderly in Nepal. But owing to relatively recent socio-economic changes, aging of the population is emerging as a problem that requires consideration before it becomes critical (Chanana & Talwar, 1987)

Several studies in Asia shows that supports from co residing children are more secure than those from children who live apart, even if the later are proximity (See Hareven, 1996). Studies in south Asia shows that co residence seems the only guarantee that elderly parents will receive support services from adult children. Support from non-co resident children to aging parents takes the form primarily of financial

assistance (Uhlenberg, 1996). Knodell and his collaboration (1996) found the similar pattern in Thailand. But some studies show that co residence with the adult children may not necessarily imply adequate support for the elder, it at least helps to integrate them into the socio-cultural nucleus of the family (Knodel et al. 1992; Kedig 1989).

Nepal is in a situation of fertility transition recently as a result of urbanization, rising level of education, increased age at marriage and more wide spread practice of family planning devices. Average family size is also decreasing since 1981. The decline in family size means parents now have fewer children to depend on it. It also means there are fewer adult children to share in the care and support of elderly parents. For many, family support remains the most valuable option as a means for security. Understanding the nature and the extent of available support mechanism is therefore critically important (UNFPA: 2003)

Elderly population is increasing very rapidly in the recent decades and current size of 1.5 million elderly populations is supposed to double within less than 20 years due to decline in fertility levels, infant mortality and rising life expectancy. If we look elderly in terms of proportion of total population it does not look like a great problem but in terms of size it's a great problem as Nepal is one of the poorest country of the world and present Maoist problem has made this problem more severe, no one is concerned for this.

Although traditional norms and values of Nepali society still stress showing respect and providing care for the elderly, but with the advent of modernization, urbanization, effect of western culture, increased participation of women in outside work, and growth of individualism as well as increased poverty has made many young people to migrate far from their parents living them in the rural area or have eroded these traditional values and norms. And now elderly are regarded as one of the most neglected group of society.

The challenge of Population ageing in Nepal like most other developing country is incorporating concern over older people's poverty into social and economic aspects. For older people- with no savings, low wages, a lack of job security, poor health, no economic support from their children, just enough earnings to make ends meet, and little help from their friends and communities – older age is not a phase of life worth looking forward to (UNFPA: 2003).

In such a situation the Universal social pension scheme (Old Age Allowance) for senior citizens is quite good news although it provides very small amount of incentives for elderly widow and senior citizens. A report of Help Age International (2004) says that small, regular payments to older people can improve their health and social standing. But the continuation of such a program in the poor country like Nepal without proper homework is also questioned as the size of the budget to be invested in this sector increase continuously.

An implication of my study is that government and non-governmental organization as well as civil society should take more interest in the welfare of the elderly people. In the national level government should formulate a national policy to provide health care and social security for elderly and should implement it in the action. Government as well as non-governmental organization should start to implement some special program for disabled elderly particularly for widow and widowers who do not receive proper care and support from children and other relatives.

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Ageism : Its Origins and Effects

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ABSTRACT

Along with race and gender, people commonly use age to categorize and stereotype others. Of the three categories, age is the only one in which the members of the in-group (the young) will eventually join the out-group (the old). Ageism is found cross-culturally, where people regard growing older with depression, fear, and anxiety. Older people are stigmatized and marginalized, with devastating consequences. A major reason for this neglect is that age prejudice is still considered socially acceptable. Intriguingly, despite the existence of ageism, the majority of older adults maintain a positive sense of subjective well-being. This paper presents theoretical and empirical findings to explain this "paradox of well-being". Suggestions have also been (proposed) in the conclusion to reduce or further combat ageism.

Keywords : Stereotype, Old people, Ageism, Subjective well-being.

Ageism can most simply be defined as negative attitudes or behaviours toward an individual solely based on that person's age. Defined this way, negative attitudes toward people because they are young would also qualify as ageism. However, throughout and consistent with the spirit of this paper, we will use the term ageism to refer specifically to negative attitudes and behaviour toward the elderly people.

Butler (1969) coined the term *ageist* to refer to evaluative judgements toward a person or persons simply due to their advanced age. Adopting the traditional tripartite model (Eagly and Chaiken, 1993), applied to older adults, proposes that attitudes comprise three

components: an Effective component, represented by feelings that one has toward older individuals. A cognitive component, represented by beliefs or stereotypes about older people'; and a behavioural component, represented by behaviour or behavioural intentions toward older adults. Ageist attitudes are best thought of as a constellation of these three factors, each of which can have a positive or negative component: feelings due to a person's age, stereotypes about what someone is like just because the person is "of a certain age", and differential treatment due to a person's advanced age.

The field of gerontology has contributed much to the study of ageism over the past thirty years. A steady stream of research on ageism has helped to uncover not only the blatant forms of age discrimination but also the more subtle ways in which ageism manifests itself in the social fabric. From greeting cards to medical school, from advertisements to the workplace, it is clear that ageism is prevalent. Surprisingly, research review reveals that the tendency to differentiate people based on their age begins in early infancy and that both negative feelings toward older adults and varied stereotypes emerge by the early preschool years.

In the Indian society, where individualism and collectivism act like figure and ground. Depending on the situation, one rises to form the figure while the other recedes into the background (Sinha and Tripathi, 2002). In other words, in India where both individualist and collectivist cultures coexist, research findings related to ageism are mixed. Sharma (1970) in his study found out that students showed predominantly negative attitudes and beliefs about the ageing and the aged. The highest degree of negative attitude was shown in the area of conservatism. Old people are more inactive type, having no hope from the future and having other worldly attitude. Subjects having older people in the family showed more negative attitudes towards older people. Sharma (1971) in another study found out the area wise and overall stereotype of Indian students and these findings were compared with the stereotypes of student samples of countries viz. U.S., Japan, Puerto Rico, Taiwan, Greece and England. The comparison reveals that Indian students have overall more negative stereotypes towards the older persons than U.S. The Greeks consider older people more conservative, less active and more interfering than Indian students. The areawise difference between Indian and other countries was also

noticed. The comparison reveals that all these cultures have negative stereotypes towards older people in the areas of conservatism, personality and interference. Anantharaman (1984) found that negativity was greater among older people with respect to variables such as financial situation, the future and insecurity. A rural-urban comparison in Punjab revealed more positive attitudes towards old age among the younger generation in the rural than in the urban area. Old people in the urban area expressed a greater sense of isolation and separation than in the rural area. Deb (1988) explained these differences on the basis of employment trends, economic factors, and family development. Intergenerational differences in attitudes towards the age have also been measured using a projective technique, the Senior Apperception Test. In majority of the cases, the old man was depicted as an altruistic authority and old woman as a good mother and younger people as nurturant and affiliative. Difference between two groups of society were seen mainly in the attribution of passive qualities to the old man by younger subjects. Submissiveness to old women by older subjects; and unsympathetic indifference and passive attitudes to the younger figures in the stories given by old people. Furthermore, Sharma (1971) try to find out the degree of ageism in college going students of both the sex (n = 600). A questionnaire containing a set of 6 problems : not having enough money to live comfortably, not having work to keep oneself busy, poor health, loneliness, lack of proper ---- amd fear of criminal attack on oneself was giving to these subjects. The subjects were asked how they rate themselves and older persons on the same problem. It was found that male and female subjects differ in their stereotype towards aging (or degree of ageism). It was also noticed that respondents having older family members have realistic rather than fancy attitude in comparison to the respondents not having older members in their families. Prakash (1992) examined attitude of Indian subjects toward the elderly people and compared to that of British and Canadian subjects. Indian subjects were found to attribute blame to the elderly group significantly more than the other two groups. Vermani (1994) revealed that old age is associated with negative stereotypes as majority of the younger generation had feelings of discomfort and tension in the presence of the old people. Comparing Indian and American undergraduates, Williams, Pandey, Best, Morton, and Pande (1987) examined their views toward young adults and old people. Both similarities and

differences were found between the two cultures. Indian generally viewed the old less favourably than Americans. The young were viewed as stronger and more active than the old in both cultures, although the degree of difference varied. When ego states were analysed, subjects in both cultures reviewed the old as being higher than young adults on the Critical Parent, Nurturing Parent and Adapted Child ego states, and lower on the Adult and Free Child ego states; the degree of difference varied between the two cultures. On the other hand, Ramamurti and Reddy (1986) found increasing favourable attitudes for old people. According to them, increase in emotional and social maturity may have mellowed negative attitudes toward the elderly population.

Such findings are the consequences of a myriad of social, cultural, biological, and psychological forces which converge to shape ageism. According to Terror Management Theory, based on the writings of cultural anthropologist Ernest Becker, ageism may result from the tendency for the elderly to arouse thoughts of death in others. Then a variety of defenses may be engaged to address it. Both proximal and distal defenses protect against the immediate, conscious awareness of death, and distal defenses serve to keep unwanted thoughts of death far away at the level of the unconscious. Perhaps the most direct way to assuage this threatening aspect of the elderly is through physical distancing – that is, by avoiding them. If they are not around, they cannot arouse death-related thoughts. Another way to avoid the elderly is to keep them out of the workplace. Age discrimination is one of the most clearly documented and economically and socially harmful consequences of ageism (Esposito, 1987). Although there may be a number of factors contributing to age discrimination in hiring, including negative stereotypes about the competence of old people, one such factor is likely to be simply not wanting old people around to remind other employees of their own fate. At a more personal level, people may seek to place elderly relatives in Old Age Homes, in part to reduce the extent to which the elderly will become a salient aspect of their lives, and thus a salient reminder of their own potential to grow old and closer to death. Indeed, elderly relatives may be an especially strong reminder of old age and death to the extent that we perceive ourselves as sharing many personality and genetic characteristics with them. This similarity may

contribute to the perception that we ourselves are vulnerable to the same fate (Schimmel *et al*, 2000).

In addition to physical distancing, people may also use psychological distancing to minimize the threat. This strategy could take two forms. The first is to view the elderly as very different from oneself. One way to do this is to view elderly individuals not as individuals but as “old people” or, even worse, refer to them with derogatory terms. The second way people psychologically distance themselves from the elderly is to view an elderly person, or all old people, as very different from them, with different attitudes, interests, and personality traits. Research has shown that people are prone to exaggerate the differences between themselves and others who have characteristics or conditions that they fear having themselves. In the same way, people may tend to exaggerate their differences from elderly individuals to deny their own susceptibility to the aging process and increasing proximity to death. As noted by Simone de Beauvoir among others, one disconcerting result of this may be the treatment of the elderly not “as real people” but as different, as another being”. Forgetting that it is a group which we all are likely to join.

According to the theory, these distancing strategies should be most pronounced in those most actively troubled by their own mortality. Thus, people whose faith in the worldview is most tenuous and people with low or unstable, fragile self-esteem should be most likely to distance from and derogate the elderly. (Harmon – Jones *et al*, 1997).

By reminding people of their own death, old people may also activate in others distal terror management mechanisms. Such distal defenses include increased self-esteem striving, increased negative reactions to those who challenge one’s worldview, and increased positive reactions to those who support one’s worldview. Thus, after exposure to the elderly, people may try to enhance their self-esteem by derogating the elderly and engaging in downward social comparison with them. To the extent that an individual perceives the elderly as holding different attitudes and values from themselves, following exposure to old people, derogation of the elderly may also serve to bolster the individual’s faith in his or her worldview.

Similarly, elderly people, particularly given the negative stereotypes of them, may threaten the durability of the ways in which

people feel good about themselves. Old people may serve as a reminder that many of people's bases of self-esteem will not endure. For example, the young person whose self-esteem is based largely on good looks, athleticism, driving ability, sexual process, or verbal alacrity may consider, when exposed to an elderly person, the transitory nature of these qualities. Such a threat may be especially strong when individuals see photos of elderly people taken when they were young, exuding health and youthful good looks.

We would also expect that distal terror management defense mechanisms be activated within the elderly themselves. In particular, if the dominant worldview is one pervasive with negative stereotypes about aging and the elderly, then the older generation's increased exposure to death – related thoughts may make them even more susceptible to buying into those negative stereotypes, thus compounding the harmfulness of ageism. Levy (unpublished manuscript) demonstrated the destructive effects of ageism where negative stereotypes primed in elderly participants lead to worsened memory task performance and also a decrease in the will to live.

Ageist attitudes have a “now you see it, now you don't” quality that defies easy explanation. Hummert's (1999) work suggests that beliefs about older adults are linked to the roles they are perceived to occupy, a position consistent with a social role analysis of attitudes toward older adults. According to the Social Role Perspective, older individuals occupy particular social roles, which should lead to a specific set of beliefs about them as a social group. Kite (1996) argued that because the employee role is occupied predominantly by people younger than 65, there is an association between agency and youth that accounts for the perception that older people are less agentic than younger people (Gekoski and Knox, 1990; Kite, Deaux, and Miele, 1991). Results of four experiments showed a link between occupational roles and stereotypic beliefs (Kite 1996; Kite and Cano, 1998). In the absence of role information, 35 year-old targets were viewed as more agentic than 65-year-old targets. However, younger and older targets described as employed were viewed as equally agentic. Gerontologists tend to examine the perceptions of older adults in relation to evaluations of other age groups. In this light, even positive absolute judgments can take a negative cast if older adults are rated positively, but younger adults are rated even more positively.

When we make age-based judgements, we are evaluating a person who either is or is not a member of our own age group. This important distinction is central to Social Identity Theory (SIT – Tajfel and Turner, 1979), which posits that people want to have a positive self-identity. Because a large part of our self-identity is made up of our group identity, we can achieve this goal only by feeling positively about the groups to which we belong. To maintain a positive identity, groups are also motivated to elevate their group above others. That is, older adults should show preferences for older adults (in-group bias), and younger adults and middle-aged adults should prefer members of their own age group and devalue people of other ages (out-group bias). Ageist attitudes could then be viewed as the product of younger age groups' creating and maintaining positive social identities. SIT does not predict that we dislike all out-groups. Rather, what is important is that we are always motivated to see our own groups more positively than other groups. Middle-aged adults are in a slightly different circumstance. As member of a dominant group that overall is seen relatively positively, they would not appear to need strategies to create positive distinctiveness for their age group. Yet middle-aged adults are also aging and so are closer to becoming members of a stereotyped group. This impending group change may increase their need for positive distinctiveness from older adults. In contrast with early adolescents, middle – aged adults hold younger subjective age identities, perhaps providing evidence for social mobility (Montepare and Lachman, 1989). Again, social mobility would result in the maintenance of attitudes toward elder adults. Middle-aged adults could also use social creativity by avoiding older adults and thus avoid thinking about their own aging, or by focusing on certain negatively viewed subgroups of older adults to ensure a positive self-comparison. Using social creativity in this way would strengthen existing negative stereotypes of older adults. Lastly, older adults' attitude towards aging defies simple explanation. The knowledge that they are becoming a part of a group about which society holds many negative views requires action (social competition to change the status of older adults) – or at least cognitive adjustment – to stay upbeat. They can use social mobility and avoid becoming a member of this group by maintaining a youthful demeanor and appearance and by avoiding any behaviours associated with the elderly. They can use social creativity by focusing

on the positive attributes of aging or by joining a specific subgroup of the elderly (e.g., perfect grandparent).

In continuation with this spirit, it may be interesting to note that despite the existence of ageism and other negative social indicators associated with aging, the majority of older adults maintain a positive sense of subjective well-being. This phenomenon has been referred to as the “paradox of well-being” (Mroczek and Kolarz, 1998). Four mechanisms are theorized to account for this improved ability to manage such problems. The first is a mature set of defense mechanisms or coping abilities. The second is the ability to select emotionally rewarding social partners. The third proposed mechanism involves accommodation of goals by older adults in the face of actual and impending age-related changes. The last is the use of processes of interpreting experiences in which information consistent with present (positive) views of the self is preserved.

Use of Mature Defense Mechanisms

There is evidence to suggest that older adults possess an adaptive set of defense mechanisms with which to handle emotional challenges. Vaillant (1993) proposed a hierarchical model of defense mechanisms in which immature defenses such as denial predominate in early life, and more mature mechanism such as humour and altruism come to the force in later life. Along similar lines, Haan (1977) suggested that coping and defensive processes develop across the life-span. Haan proposed that the use of coping strategies that involve cognitive mediation and mature emotional expression increase with age, whereas defensive processes that lack conscious cognitive mediation and distort reality decrease with age. Both the Vaillant and Haan models have received considerable empirical support (Diehl, Coyle, and Labouvie –Vief, 1996). Older adults have the ability to handle negative emotions in a more productive and positive manner than do their younger counterparts. This ability allows them to engage in extensive “damage control” when exposed to potentially negative emotional interchanges in which they are made to feel weak, inferior, or rejected by virtue of their status as older adults.

Socioemotional Selectivity Theory

Related to the notion of enhanced psychosocial maturity in later life is socioemotional selectivity theory, which proposes that older

adults have found ways to control successfully the potentially negative outcomes of their life experiences (Carstensen, 1992; Carstensen, Isaacowitz, and Charles 1999). Rather than spend time with strangers, who may base their interactions with older adults on social stereotypes instead of personal knowledge, older adults prefer to spend their time with family and close friends, who are more likely to provide positive emotional feedback. Though this mechanism of selection, older adults are able to maintain positive rather than negative emotions.

The theory postulates that the underlying impetus for changes in the choice of desired social partners is the perception of time as limited, not age.

Through the process of selection, the theory explains the empirical fact that older adults have smaller social networks. In contrast to the disengagement theory, however, socioemotional selectivity theory accounts for the fact in a positive light, presenting older adults as active agents in the construction of their social worlds. Furthermore, older adults do not restrict their social networks because they value emotional experiences any less than do younger adults, a process implied by disengagement theory; in fact, it is for the opposite reason.

Goal Accommodation

A third mechanism that older adults may use to maintain a positive sense of self despite objective evidence of losses and exposure to negative stereotype is to accommodate or reduce their level of aspirations of goals. According to Brandstädter and Greve (1994), successful aging results from an “accommodative shift” in which adults gradually relinquish the desired aims and objectives of their younger years to ones that are more compatible with their more restricted set of abilities in later life. Such a shift allows them to maintain a positive sense of self because they are no longer faced with their objectively based physical and cognitive limitations.

Similarly, Heckhausen and Schulz postulate that older adults shift from primary control of their environment, in which they try to impose their will onto situations, to secondary control, in which they change their goals so that they can derive a sense of achievement and accomplishment.

Identity Processes

Identity Process Theory (Whitbourne, 1986) proposes that people interpret their perceptions of experiences through the Piagetian – like process of identity assimilation: the interpretation of experiences through the template provided by the individual's self-schemas or identity. The theory postulates that the majority of adults attempt to maintain a positive sense of self — as competent, well regarded, and ethical. However, some situations are not amenable to identity assimilation, and this sense of the self must undergo some change which occurs through identity accommodation. Through this process, the older person with reduced muscle strength must make a shift to viewing the self as having lost some of his or her former competence.

Ideally, however, as in Piaget's theory, there is a balance or dynamic equilibrium between identity assimilation and identity accommodation. When an individual is forced with experiences that challenge his or her self-definition, identity assimilation should gradually give way to identity accommodation. However, identity accommodation should not become so predominant that the individual's identity is based entirely on the ups and downs of life experiences. Instead, the individual should be able to make changes in identity as necessary but maintain a coherent and integrated sense of self.

According to the identity process model, the older individuals maintain a positive sense of well-being despite objective losses and exposure to ageism through the mechanism of identity assimilation. The “successful” aged does not pretend that aging is not occurring. Instead, aging is adapted to at the level of behavior. Older adults maintain their overall positive sense of identity while at the same time making the behavioural micro-accommodations that allow them to preserve their health and functioning at optimal levels. Older adults vary in their ability to take these measures to protect and express the self in later life.

Not all older individuals are able to withstand the challenges of negative views of aging in society. A mindful reconsideration (Langer, 1989) of both the various cycle of stereotype encoding, confirmation, and expression and of the underpinnings of aging stereotypes provides a more hopeful view. By questioning aging stereotype, we free ourselves from their mindless repetition and fulfilment. By re-examining the bases for judgements about the elderly people, we

improve our ability to look beyond our own level of development. By increasing awareness of the role of environmental standards and cues, we improve our ability to foster environments that promote growth. A mindful understanding of “acting your age” necessarily acknowledges that such actions are different for different individuals and indifferent contexts. Increased mindfulness on the part of individuals of all ages will encourage a focus on positive change and development throughout the life span. Moreover, it should lead us to an increased awareness of instances in which a re-examination of what are currently perceived as decrements may actually reveal more evolved behaviour and perspective. The second step to combat ageism or reduce ageism should be the definition or creation of spaces where young, middle-aged, and elderly people from all walks of life can get to know each other enough to build mutual respect, develop cooperative relationships, and reignite the norm of human –heartedness.

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BOOK REVIEW

A Caregiver's Guide to Alzheimer's Disease (2005) (Eds.) Patricia R. Callone, Connie Kudlacek, Barbara C. Vasiloff, Janaan Manternach, Roger A. Brumback. Demons Medical Publishing, LIC 386 Park Avenue South, New York, New York 110016, Pages 144, \$16.95

The intent of this book, *A Caregiver's Guide to Alzheimer's Disease*, is to focus on specific tips that will help the person with the disease, and caregivers, family members, and friends to empower the skills, talents, and abilities that remain during the disease progression. You will find tips for persons in all stages of Alzheimer's disease or related dementia. If you have been diagnosed with the disease, you will want to understand what is physically happening in your brain and learn to empower your own special skills and talents throughout the disease progression. Tips for caregivers, family members, and friends also are included, so that they can understand what is physically happening in the brain of a person with Alzheimer's disease. Using this information, caregivers, family members, and friends can help persons with Alzheimer's disease express their desires and help them accomplish what they can throughout the progression of the disease.

In Section A, the progression of the disease has been divided into stages : the Pre-Alzheimer's stage, when the brain and all its capacities are fully functioning; the Early to Mild stage, which marks the onset of the disease; the Moderate stage; and the Severe stage. Each chapter starts with a scenario, depicting a daughter and her father going out to eat. These scenarios are intended to help a caregiver understand the changes that can occur because of the progression of the disease. The reader gets a first-hand glimpse of what day-to-day living might be like for the caregiver and the person for whom he or she is caring.

These scenarios are followed by an overview of the specific disease stage, a description of how the disease affects the brain, and a diagram highlighting the functions that remain in each stage. The circle diagram identifies the key skills or a capacities that are present in the brain; memory, language, complex tasks, social skills, judgement and reasoning, ambulation, and senses. The shaded part of the diagram shows the brain functions that remain. The white part of the diagram indicates those functions in the brain that have been damaged by the disease.

General tips for the caregiver are followed by specific tips that will help the person with Alzheimer's disease compensate and cope with the changes that are occurring. These tips are from caregivers and various

professionals who, on a daily basis, care for those who have Alzheimer's disease or related dementia. The tips provide the caregiver with ways to focus on the capabilities that remain in spite of losses that might be occurring in the key functions of the brain.

It is suggested that you read the entire book to get an overview of the progression of the disease, and then go back and concentrate on how to use the tips listed for the particular stage in which you find yourself living and working. Be creative about how you make each particular stage as productive as possible for the person with the disease. Because every person is endowed with special talents, skills, and abilities that can be expressed throughout life, look for opportunities to enhance those gifts that remain.

Section B gives the reader insight into the reasons why specific tips have been suggested for the various stages. Frequently asked caregiver questions are answered, and these questions and answers may help caregivers reflect on important issues as they continue in the caregiving process, including :

Legal and financial issues to consider during the progression of the disease.

- Family forums in the caregiving process
- The role of medication and other illnesses in the various stages of the disease
- Helping young children understand what is happening to a loved one
- Handling the holidays and celebrations
- Making the living environment more stimulating and enjoyable.

Section C suggests resources, including a listing of Internet resources that can be most useful to gain additional information about the disease and to contact organizations that can be of assistance.

A Caregiver's Guide to Alzheimer's Disease puts information into a framework that helps contribute to the empowerment of the skills and talents of persons with the disease as well as their caregivers, family members, and friends.

EDITOR

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