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Health Status of the Elderly-A Social Perspective

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Abstract

Ageing is a normal process and not a disease. Human ageing is characterized by progressive decline (referred to as homeostenosis) in the homeostatic reserve of every organ system. With increasing age there are metabolic changes and also reduction in physical activity. Elderly individuals also face problems in appropriate dietary intake because of alteration in taste with increasing age and loss of teeth. Nutritional needs of the elderly are influenced not only by the present physical state and activity of the individual but also by the long standing food habits and many social, environmental, emotional and physiological stresses to which a person has been subjected to throughout his life. The present study on institutionalized elderly above 60 years of Govt. and Private old age home of Chandigarh was undertaken to assess and compare their nutritional status. Techniques like anthropometry like height, weight, biochemical estimation like hemoglobin, lipid profile and one day 24 hr. dietary recall method were used for the assessment of nutritional status. A structured questionnaire was used for collecting demographic profile and health related problems. Analysis of nutritional status data revealed that inmates of private old age home presented a better nutritional status. Industrialization and urbanization together with the migration of the younger generation abroad has/have severe impact on the Indian society with the care of the aged having emerged as a pressing social problem. To an extent, old age homes have filled this need. A sharp contrast of environments was perceived to be existing in two types of institutional settings – those with free facilities which are government aided and those having to pay and stay facilities run by private undertakers.

Key words- Aging, Nutritional status, elderly, nutritious diet,

Introduction

Ageing is the accumulation of changes that occur over a lifetime, resulting in an increasing acceptability to malnutrition and deaths[1]. It is defined as "The Period of life, when impairment of mental and physical functions become increasingly manifested by comparison with previous period of life[2]. It is the last stage in the life processes of an individual and it is an age group or generation comprising a segment of the oldest members of a population[3]. An increase in longevity and a decline in fertility have contributed to people living much longer today than ever before in the last 50 years[1]. In India there are over 77 million persons aged 60 years and above in 2001 and is likely to reach 113 million in 2016[2]. The decline of each organ system appears to occur independently of the changes in the other organ systems and is influenced by diet, environment, personal habits and genetic factors[6,7]. Elderly care emphasizes the social and personal requirements of senior citizens who need some assistance with daily activities and health care, but who desire to age with dignity. It is an important distinction, in that the design of housing, services, activities, employee training and such should be truly customer-centered. It is also noteworthy that a large amount of global elderly care falls under the unpaid market sector The elderly suffer from health problems due to ageing process like senile cataract, glaucoma, nerve deafness**,** musculo-skeletal changes affecting locomotion, failure of special senses and poor reflexes (resulting in accident proneness) and enlargement of prostate in males[8]. Traditionally, elderly care has been the responsibility of family members and was provided within the extended family home. Increasingly in modern societies, elderly care is now being provided by state or charitable institutions. The reasons for this change include decreasing family size, the greater

life expectancy of elderly people, the geographical dispersion of families, and the tendency for women to be educated and work outside the home. Although these changes have affected European and North American countries first, they are now increasingly affecting Asian countries as well.

Industrialization and urbanization together with the migration of the younger generation abroad has/have severe impact on the Indian society with the care of the aged having emerged as a pressing social problem. To an extent, old age homes have filled this need. A sharp contrast of environments was perceived to be existing in two types of institutional settings – those with free facilities, which are government aided and those having to pay and stay facilities run by private undertakers. **Thus, the present study was undertaken to assess and compare the nutritional status and health problems of the elderly residing in these institutions.** With increasing age there are metabolic changes and also reduction in physical activity. Elderly individuals also face problems in appropriate dietary intake because of alteration in taste with increasing age and loss of teeth. Traditionally elderly population has been dependent on their children for their health and social welfare. However, owing to the social and cultural changes that are taking place within the Indian society, this support may not be as readily available as it is believed. Hence, having a positive attitude, taking regular exercise, taking balanced and simple food and adopting proper lifestyle solves most of the physical and mental problems of the elderly and makes their life happier and graceful. It is also recommended that youth should be encouraged in providing care and companionship to lonesome senior citizens, thereby strengthen the special bond between grandparents and grandchildren.

Availability of limited scientific data for elderly population particularly with respect to their health, lifestyle and nutritional status lead to the study.

Materials and Methods

The study was conducted on elderly above 60 years residing in Govt. old age home, Sector 15, Private old age home, Sector 43 of Chandigarh.The study was conducted on elderly above 60 years.32 subjects from Govt. old age home, sector 15 and 28 subjects from Private old age home, Sector 43. Subjects were randomly selected. All the subjects were personally interviewed using the specially formulated Questionnaire cum interview schedule. Pre-designed structured questionnaire having close ended and open ended questions were included in the questionnaire. A random sample of 60 elderly were selected from each old age home.

The data was collected in the month of April and May. Every respondent was interviewed individually and doubts if any, were cleared by explaining each and every question. Every question was explained in local language and answers were filled in questionnaire by the researcher. The respondents were made to feel free and comfortable during the time of interview.

Rapport Formation: The interviewer visited the old age old homes prior to filling in of questionnaire and conducting the study for rapport formation with the respondents.

Method Used For Survey

Parameters like-Demographic profile, nutritional status using techniques like anthropometry like height, weight, BMI, biochemical estimation like hemoglobin, one day 24 hr. dietary recall method and health problems were studied.

Dietary intake included the information regarding the daily food intake of the respondents by one day 24 hour recall method. The respondent was asked about the consumption of food of the previous day. Intake of food in cooked terms was converted to raw amounts. Details of ingredients were also collected. During the process standardized utensils were used for data collection. The nutrients calculated for study included energy, protein, fats, calcium, iron, thiamine, vitamin C and fiber.

Pre Testing of questionnaire: The questionnaire was pre tested on 15 respondents each belonging to Institutionalized and non institutionalized category.

Anthropometric Measurements

Body measurements such as height, weight are important tools in the evaluation of nutritional status of individuals or groups. Anthropometric measurements although genetically determined are strongly influenced by nutrition. Correctly recorded and interpreted, they reflect the physical state of individuals and indicate how the individuals deviate from the average at various ages of body size, build and nutritional status. Standardized techniques and equipments were used for data collection. The parameters included in this study were:-

(i) WEIGHT

The measurement *of* weight was taken using electronic weighing scale having precision of 100 grams. The subject was made to stand on the centre of the platform without touching anything else. Subjects were asked to remove their shoes and were weighed with minimum clothing. The weight was recorded in "Kilograms".

(ii) HEIGHT

Height was measured using a measuring tape. The subject was asked to remove the shoes and was made to stand on a flat floor with feet parallel and touching the upright. The head was held comfortably erect. The arms were hanging at the sides in a natural manner. The head piece was gently lowered crushing the hair & making contact with top of the head. The Height was measured in "cms".

(iii) BODY MASS INDEX (BMI)

It is the measure of the relative body fatness. It is based on weight in (Kilograms) with minimal clothing and height (in meters) without shoes.

$$\textbf{BMI} = \frac{\textbf{Weight (Kg)}}{\textbf{Height (Mts)}^2}$$

The BMI values between 20-25 are considered to be compatible weight, health for both men and women. BMI values between 25-30 and above 30 are classified as obese grade 1&2 respectively (Garrow, 1991).

The BMI classification followed for the study was:

BMI Classification

BMI Class	**Presumptive diagnosis**
Below 16	CED grade III (Severe)
16-17	CED grade II (Moderate)
17-18.5	CED grade I (Mild)
18.5-20	Low Weight
20-25	Normal
25-30	Obesity Grade I
Above 30	Obesity Grade II

Hemoglobin level of the subjects were recorded from the latest medical reports of the subjects. And respondents were classified using WHO classification. The WHO classification used in the study is given below:

W.H.O. Classification of Hemoglobin

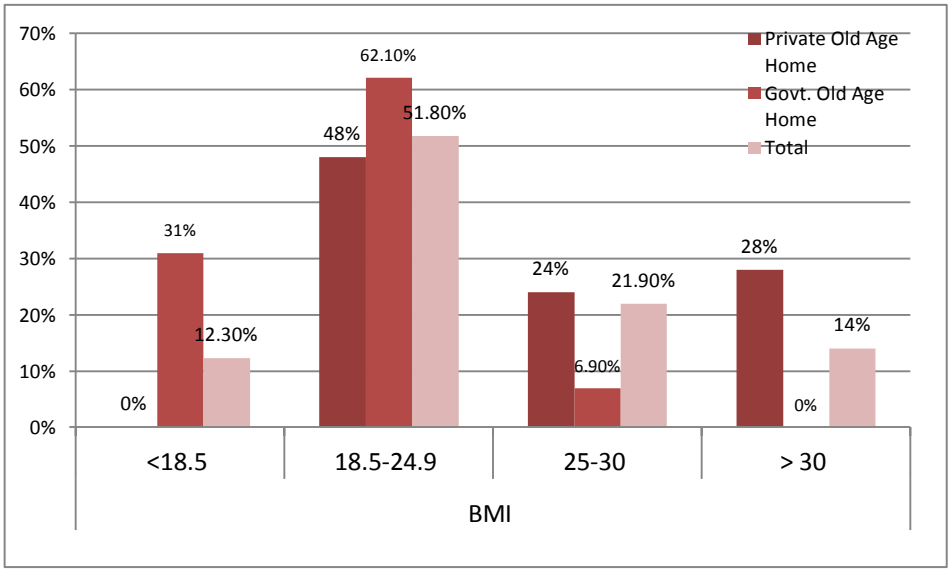
Above 11	Normal
10-10.9	Mild Anemia
7-9.9	Moderate Anemia
Less than 7	Severe Anemia

Results and Discussion

The organization and management of the private run old age homes were assessed to be better in all aspects than the government aided homes. Out of the total (n=60) subjects, 55%(n=33) subjects were females and 45%(n=27) subjects were males, so the percentage of females was more than the males and half of the elderly 50% belonged to 60-70 yrs. of age. 84% subjects in government old age homes were illiterate whereas in private old age homes 60% subjects were educated upto college and above. In Government homes, subjects had low income i.e. less than Rs.2, 500 per month whereas in private old age homes subjects had high income between Rs.2, 500– Rs. 7,500 per month.

According to Body Mass Index, in Government homes only 7% subjects were obese whereas in private old age homes 46% subjects were obese.

FIGURE 1: DISTRIBUTION OF SUBJECTS ACCORDING TO BMI



Thus a significant difference of BMI was found between subjects of Private Old Age Home and Govt. Old Age Home.

There was no subject in Government homes who was at high risk for cardiovascular disease whereas in private homes 29% subjects were at high risk. In private old age homes subjects were suffering more from Hypertension, Heart Trouble and Diabetes than those in Government old age homes. Similarly study done by Shilpa Jose, 2001 also found cardiovascular diseases were higher among private old age home subjects.

In Private Old Age Home 21.4% (n=6) subjects, In Govt. Old Age Home 15.6% (n=5) subjects were suffering from arthritis.

Findings revealed that subjects who were suffering from arthritis were taking calcium supplements every day and on alternate days. In Private Old Age Home 39.3% (n=11) subjects and 75%(n=24) in Govt. Old Age Home subjects were suffering from visual problems. Other diseases such as Heart Trouble, Gastro intestinal problems, Dental, Hearing Problems were also seen in the elderly subjects.

Similar problems like Cataract, Hypertension and Diabetes have also been reported by Dhar H.L. He found that out of 202 elderly subjects 32.18% suffered from cataract, 16.34% from hypertension, 9.41% from diabetes.

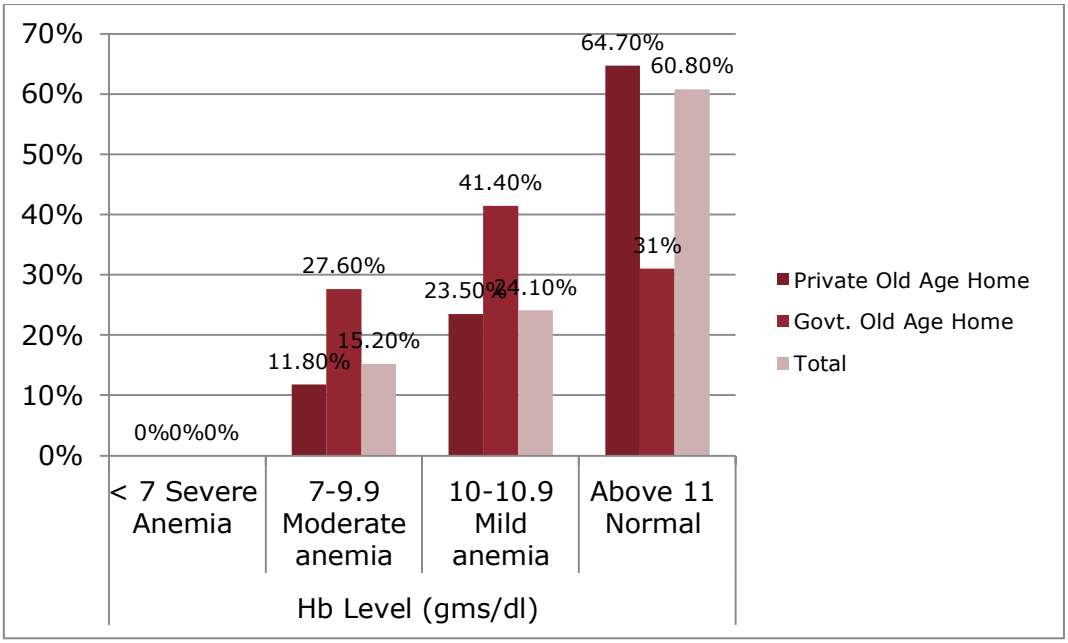
Similarly Sarkar S., (2003) conducted study on 100 elderly persons. He found common cause of morbidity were arthritis (57%), cataract (51%), hypertension (44%), hearing loss (36%), constipation (34%), hyperacidity (30%), dental caries (10%).

The most common clinical conditions among elderly according to A.L. Sharma, (2003) found to be hypertension (39.53%), cataract (35.3%), Osteoarthritis (33.67%) chronic obstructive airway diseases (19.92%), CVD (18.85%), diabetes Mellitus (15.23%), dyspepsia (11.03%), irritable bowel syndrome (9.2%) and depression (8.5%).

The other common problems from which both the groups were suffering were Arthritis, Gastrointestinal, Visual, Dental and Hearing problems. It is evident that on an average respondents are suffering from 2-4 common health problems namely hypertension, diabetes, arthritis, eye problems and gastrointestinal problems and dental problems. Respondents reported taking allopathy, homeopathy and naturopathy treatment individually and in combination for various health problems.

Biochemical profile revealed that in Government old age homes majority of respondents (41.4%) had mild anemia whereas in private old age homes 64.7% had normal hemoglobin. Whereas on the contrary, study done by Shilpa Jose, 2001 found subjects of both group that is respondents of government and private old age homes to be moderately anemic.

FIGURE 2: DISTRIBUTION OF SUBJECTS ACCORDING TO HEMOGLOBIN LEVEL.*



Out of the total (n=120) selected subjects, reports of 79 subjects were available. Out of these (n=79) subjects 60.8% (n=48) subjects had normal hemoglobin, 24% (n=19) subjects were mildly anemic and there were no subjects who were severely anemic.

In Private Old Age Home, out of the 28 subjects reports of 17 subjects were available, out of these 17 subjects 64.7% (n=11) subjects were normal and 11.8% (n=2) subjects had moderate anemia.

In Govt. Old Age Home out of the 32 subjects reports of 29 subjects were available, out of these 29 subjects 31% (n=9) subjects were normal and 27.6% (n=8) subjects had moderate anemia.

Bhooma N, (2004) in her study found 74% subjects had normal hemoglobin, 20% had mild anemia and there was no one who had moderate anemia but she also found 8% subjects who had severe anemia, out of 50 institutionalized subject.

Whereas Shilpa Jose et al, (2001) found only moderately anemic institutionalized subjects.

Analysis of one day 24 hour dietary recall method which was part of the present study revealed that subjects of Private Old Age Home were consuming more fats in their diet as compared to the subjects of Govt. Old Age Home. Therefore subjects of Private Old Age Home were suffering more from hypertension and diabetes. Table 1 shows the mean nutrient intake of the respondents included in the study.

Table 1: MEAN NUTRIENT INTAKE OF THE RESPONDENT OF GOVERNMENT(GROUP A) AND PRIVATE OLD AGE HOME (GROUP B) AS COMPARED WITH THE RDA*

MALES						FEMALES			
Nutrients	**Group**	**RDA**	**Total Mean ± SD**	**% of RDA**	**t-Value***	**RDA**	**Total Mean ± SD**	**% of RDA**	**t-Value***
Energy (Kcal/d)	**A**	2425	2113.84 ± 245.63	87.17	4.56*	1875	1870.33± 235.2	99.75	0.11
	B		1447.85± 198.04	59.7	18.46*		1424.44± 217.35	75.9	8.79*
Proteins (gms/d)	**A**	60	57.18 ±15.03	95.26	6.82*	50	46.13± 15.29	92.27	.979
	B		27.64 ±2.87	46	42.15*		29.83±2.72	59.6	31.36*
FATS (gms/d)	**A**	20	49.38 ±8.59	246.9	12.32*	20	47.8± 7.23	239	14.88*
	B		25.85 ±5.51	129.2	3.972*		24.83± 4.43	124.1	4.623*
Calcium (mg/d)	**A**	400	626.15 ±73.54	156.5	11.08*	400	564.8± 140.13	141.2	4.55*
	B		341.42± 69.52	85.2	3.15*		326.11± 69.93	81.53	4.482*
Iron (mg/d)	**A**	28	14.61 ±4.01	52.2	12.03*	30	12.13 ±2.53	40.44	27.33*
	B		6.33 ±1.96	22	41.31*		6.11±1.711	20.37	59.23*
Thiamin (mg/d)	**A**	1.2	1.28±.438	106.92	.682*	0.9	1.07±.4.31	119.7	1.59.3
	B		.514 ±.116	42.8	21.97*		.527±.112	58.64	14.00*
Vitamin C (mg/d)	**A**	40	31.53 ±7.69	78.85	3.96*	40	32.86± 10.05	82.17	2.74*
	B		30.50 ±9.01	76.2	3.94*		25.83 ±8.45	64.58	7.11*
Fibre (gms/d)	**A**	28	6.73 ±2.33	24.07	32.7*	28	5.50 ±1.004	19.67	86.71*
	B		3.50 ±1.60	12.50	57.10*		3.00± 1.13	10.71	86.7*

** ICMR-1990*

Findings also revealed that subjects living in institutions were not following any kind of special prescribed diet such as low sodium, low fat and diabetic diet. In Institutions, attendants were taking care of the diet of severely ill patients but other patients were not given any prescribed diets. Nutritional needs of the elderly are influenced not only by the present physical state and activity of the individual but also by the long standing food habits and many social, environmental, emotional and physiological stresses to which a person has been subjected to throughout his life. Wide Variations in the ability of the elderly to ingest, digest, absorb and utilize nutrients make it difficult to generalize their nutritional needs. However, due to insufficient data, Indian Council of Medical Research has not given any separate recommendations for all other nutrients can be considered similar to that of adult men and women.

According to the frequency of consumption of different food products, majority of the subjects were consuming dry chapathi. In breakfast majority had Parantha/ Dalia/ Bread/ Paneer/ Egg. Pulses which were mostly consumed by elderly were Lentil, Green gram Dhal, Arhar and Black gram (whole). Institutionalised subjects consumed Chutnies/ Salad/ Pickles very less than the non institutionalised subjects. Those who were non vegetarian mostly had egg and chicken. In between meals institutionalised subjects had biscuits whereas non institutionalised subjects sometimes had namkeen, pakoda, samosa and sometimes they had biscuits. Majority of the subjects had tea whereas some of the subjects had milk, Lassi (namkeen), in institutions milk was provided to them only in breakfast. Non institutionalised subjects consumed more seasonal fruits and fruit juices like Banana, Mango, Orange, Papaya, Watermelon than institutionalised subjects because in institutions no fruit was provided to them, they have to consume fruits by their own and also subjects were consuming less hard textured fibrous fruits like Apple due to the dental problems and due to loss of teeth. Seasonal green leafy vegetables were consumed by both institutionalised and non institutionalised subjects.

Energy needs appear to decline with age in association with loss of lean body mass and a decrease in physical activity. Energy intake decrease most rapidly in the very old due to disabilities which limit physical activity. Further, a variety of socio-economic, pharmacologic and psychologic factors contribute to decrease food intake in older adults. The total mean calorie intake of both male and female was calculated separately and it was found that the mean calorie intake of male (n=55) came out to be 1865.09 Kcal/day which is 77% of the RDA, while female (n=65) mean calorie intake came out to be 1659.07 kcal/day which is 88.4% of the RDA.

In Private Old Age Home mean calorie intake of male (n=13), out of (n=28) subjects came out to be 2113.84 Kcal/day which is 87.17% of RDA, while female (n=15) mean intake came out to be 1870.3 Kcal/day which is 99.7% of RDA.

Whereas mean calorie intake of subjects living in Govt. Old Age Home found to be lesser than Private Old Age Home. Mean Daily intake of energy among the males and females was found to be significantly low as compared to the RDA. A significant difference of calorie intake was also found between the subject of Private Old Age Home and Govt. In Government old age homes respondents except the intake of fats, the intake of energy,proteins,calcium, iron, thiamine, vitamin C and fibre were below the RDA (ICMR)$_4$ whereas in private old age homes respondents intake of fats, calcium, thiamine were found to be more than RDA and rest nutrients were below RDA.

TABLE 2: SPEARMAN'S CORRELATION BETWEEN FAT INTAKE AND HEART PROBLEM

	Heart Problem
Fat Intake	+.258**

*** Correlation is significant at 0.01*

This table 2 highlights a positive correlation between Fat intake and heart problems among the elderly. This correlation indicates that those whose intake of fat was more, were suffering more from heart problems. Similarly study done by Shilpa Jose, 2001 found intake of energy, protein, iron below RDA in both the groups whereas intake of thiamin and Vitamin C higher than RDA in subjects of Group B. In present study intake of iron was below RDA whereas study done by Bhooma N, 2005 found intake of iron normal in both the groups. And it was also found that Government old age homes elderly had significantly greater deficit when compared to the intake levels of private old age homes except Vitamin C. The nutrients which were the cause of concern were that the intake of fats should be reduced whereas intake of iron, fibre and vitamin C should be increased. These observations indicated better quality and quantity of diets were supplied in private old age homes respondents.

Conclusion

Thus study revealed that in all areas of assessment, inmates of private old age home presented a better status because in private old age home there is good infrastructure facilities, proper health and dietary care as compared to the govt. old age home therefore there is a need to improve the status of the govt. old age homes so that elderly living there should be properly cared. Thus it can be concluded that apart from the dietary factors, extraneous factors like age, sex, marital status, educational status, physical, social, psychological and other factors which include medical problems contribute to the nutritional status of the elderly. From the present study it was found that 30% of the elderly were not physically active therefore elderly should be advised to do regular and light exercise to keep fit and to prevent the occurrence of deceases like arthritis, diabetes, obesity etc. and also care should be taken that the diets of the elderly should nutritionally adequate and well balanced. From the social point of view elderly were socially involved with their friends/relatives which make them feel happy. It shows that physical ties of the elderly men and women with their adult children have weekend but their psychological and emotional bond between them was still strong. Since good nutrition is of immense significance during old age, care should be taken that the diets of the elderly are nutritionally adequate and well balanced.

Food rich in fats should be avoided to prevent the conditions of hypertension and other cardiovascular diseases. Dietary fiber should be included in their diet as dietary fiber has a beneficial effect in various conditions associated with ageing such as constipation, diabetes and cardiovascular diseases. Intake of calcium should be increased to compensate for its loses due to gradual demineralization of bones associated with ageing. Therefore, it is essential that an adequate intake of all the nutrients like energy, protein, fats, calcium, iron, thiamin, vitamin A, C, D, E should be present in elderly diet to prevent them from nutritional related health problems. Present study and various studies conducted by Dhar(9) , Swamy(10),Sidharth(11), Meneilly(12),Gupta(13) on Hypertension and Diabetes found that hypertension and diabetes is more prevalent in elderly.

Therefore, there is need to develop comprehensive geriatric health care incorporating health education on nutrition and life style among elderly. Health education campaign should be started for the elderly to create awareness with regard to physical activity to reduce obesity, regular treatment for control and management of hypertension and diabetes mellitus to prevent further complications. It is also recommended that a geriatric hospital exclusively for elder people should be established in every state in India to cater to the specific needs of the elderly and also separate geriatric OPDs must be established at all hospitals to avoid standing in long queues for which the elderly are physically not capable because of the manifold handicaps.

India's cultural view of elderly care is similar to that of Nepal's. Parents are typically cared for by their children into old age, most commonly by their sons. It should be noted that in these countries, elderly citizens, especially men, are viewed in very high regard. Traditional values demand honor and respect for older, wiser people. India is facing the same problem as many developing nations in

that its elderly population is increasing tremendously, with a current estimate of 90 million over the age of 60. Using data on health and living conditions from the India's 60th National Sample Survey, a study found that almost a quarter of the elderly reported poor health. Reports of poor health were clustered among the poor, single, lower-educated and economically inactive groups. Under its eleventh Five-Year plan, the Indian government has made many strides similar to that of Nepal. Article 41 of the Indian Constitution states that elderly citizens will be guaranteed Social Security support for health care and welfare. A section of the 1973 Criminal Procedure Code, alluding to its traditional background, mandates that children support their parents if they no longer can themselves. NGOs, however, are prevalent in Indian elderly care, providing homes and volunteer care, but governmental policies and organizations are more popular.

Promoting independence in self-care can provide older adults with the capability to maintain independence longer and can leave them with a sense of achievement when they complete a task unaided. Older adults that require assistance with activities of daily living are at a greater risk of losing their independence with self-care tasks as dependent personal behaviours are often met with reinforcement from caregivers. It is important for caregivers to ensure that measures are put into place to preserve and promote function rather than contribute to a decline in status in an older adult that has physical limitations. Caregivers need to be conscious of actions and behaviors that cause older adults to become dependent on them and need to allow older patients to maintain as much independence as possible. Providing information to the older patient on why it is important to perform self-care may allow them to see the benefit in performing self-care independently. If the older adult is able to complete self-care activities on their own, or even if they need supervision, encourage them in their efforts as maintaining independence can provide them with a sense of accomplishment and the ability to maintain independence longer

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