

# Nutritional Assessment of Geriatrics in Old Age Home

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## Abstract

Geriatrics is a medical speciality focused on providing care for the unique health needs of the elderly. Inadequate food and malnutrition are more likely to affect the elderly. Despite appearances, malnutrition is relatively common in developed countries, especially among elderly patients in hospitals or old age homes. The aim of this study was to determine the prevalence of the diseases and correlate it with age among people over 60 years and above in Chengalpet. A total of 100 elderly people were personally met and discussed about the study and data was collected. A purposive sampling technique was used to select participants for this study. Nutritional assessment was carried out to examine the malnutrition. The biochemical parameters blood pressure, random blood sugar, haemoglobin, and blood serum protein were estimated for the respondents. Clinical assessments for elderly people were examined. 17% of the elderly people were found to be underweight and 21% were obese. 79% of respondents had below-average levels of haemoglobin. Hence, the study concludes that there was no correlation between diseases prevalence with age. The study also found that there was no difference between the dietary intake of different old age homes.

**Key words:** Nutritional assessment, Malnutrition, Geriatrics, Biochemical assessment, Old age home

Worldwide, the percentage of elderly people is increasing rapidly. It is anticipated that by the year 2050, there will be nearly 1500 million more elderly people worldwide than they were in 2010, with the majority of this growth occurring in developing nations (WHO,2011). An individual's nutritional status may alter as they age due to changes in their physiological, psychological, and social makeup (Danielewicz, A. L *et al.*,2014). Nutritional issues associated with aging are currently a worldwide problem. Nutritional deficiencies develop in old age as a result of physiological changes brought on by aging, stressful life events, hampered everyday living routines, a lack of financial support, and insufficient food access which are common factors which often leads to malnutrition. Malnutrition among the elderly in India is typically underreported in terms of its severity. There have only been a few research performed thus far. Among these, a 2016 study by the PSG Institute of Medical Sciences and Research in Coimbatore, Tamil Nadu found that more than 50% of the aged population was underweight and more than 90% had energy consumption below the suggested amount (Mathew AC *et al.*,2016). Nutritional screening, in its different forms, seeks for signs of nutritional issues so that those who are detected can have a complete nutrition assessment and possibly receive medical treatment. (Berner, Y. N.,2003).

Nutritional assessment is "a method for determining an individual who is malnourished or who is at risk for malnutrition to evaluate if a comprehensive nutrition evaluation is necessary. "Patients identified as being at nutritional risk

should undergo nutritional assessment in accordance with the first stage (i.e., screening for risk of malnutrition). In order to establish whether there is indeed a nutrition issue, to identify the issue, and to evaluate its severity, assessment enables the clinician to obtain additional information and perform a physical examination that is specifically focused on nutrition. The information gathered during a nutritional evaluation is frequently identical to that gathered during the screening procedure but is more detailed. Instead of determining nutritional status, evaluation identifies risk. The measurement of oral nutritional intake, including its qualitative and quantitative components as well as its amounts of calories, protein, and micronutrients, is a crucial component of nutritional assessment. (Charney, Pamela, 2008).

However, only a very small number of community studies were carried out in India to evaluate geriatric malnutrition. I have therefore decided to conduct this survey of the elderly population in old age homes. The purpose of this study was to determine the frequency and correlates of malnutrition among elderly people aged 60 and older in Chengalpet. Therefore, the study had the following objectives;

- To study the demographic profile among the geriatric residents living in old age home.
- To assess the anthropometric measurements and biochemical parameters of old-age people.
- To evaluate the clinical and dietary assessment of the elderly.

## MATERIALS AND METHODS

The current study was conducted to determine the nutritional status and detect malnourished elderly people living in old age homes.

### *Locale and sample selection*

The study was conducted in the Chengalpet district. The purposive sample tactic was used to choose participants for this research study. According to Kelly, 2010, "purposeful sampling is used to select participants that are most likely to produce suitable and useful information." A sample of 100 participants was selected randomly above the age group of 60 years.

### *Criteria for sample selection*

**Inclusion criteria:** Individuals above 60 years of age who can perform their own day to day activities by themselves with or without comorbidity and individuals who are willing to participate.

**Exclusion criteria:** Individuals who are bedridden and individuals who are not willing to participate.

### *Method of data collection*

A well-structured interview schedule was framed by using questionnaire as a tool. It was evaluated to identify the demographic profile along with nutritional assessment. A consent document was prepared and administered among the samples to volunteer for the research study and got approved from the Trustee/Head of the Old Age Home. In the present study the questionnaire is divided into 5 divisions such as demographic profile, anthropometry, biochemical, clinical and dietary assessment. Totally 100 elderly people were met personally and explained about the questionnaire and the data were collected.

The data collected was compiled, tabulated and analyzed for mean, standard deviation, t-test and paired t-test methods by using SPSS software.

### *Ethical consideration*

This study 'Survey on Nutritional Assessment of Geriatrics in Old Age Home' has been approved by the Independent Human Ethical Committee (IHEC) dated: 14/10/2022 (Protocol No: - SDNBVC/HSC/IHEC/2022/03) conducted by the department of Home Science, SDNB Vaishnav College for Women, Chrompet, Chennai -44.

## RESULTS AND DISCUSSION

### *Socio-economic background of the elderly Propagation of respondents based on Age*

The above (Table 1) shows the propagation of respondents by age group. 41% of respondents fall under the age group of 60-70 years among which majority of the respondents were females (35%) and remaining 6% were males. In the age group of 71-80 years, the total number of respondents were 29% in which 17% were females and 12% were males. In the age group of 81-90 years females have the majority of 16% and males have the minority of 11% among 27% in the total number of respondents. Only 3% of respondents were seen between the age group of 91-100 years in which no male respondents were seen. The reasons behind the increased number of female respondents than male inquired during the survey were insecurities, financial dependency, migration of children etc.

Table 1 Age of the respondents

Age	(N=100)		Percentage (%)
	Male	Female	
60-70	6	35	41
71-80	12	17	29
81-90	11	16	27
91-100	Nil	3	3
Total	29	71	100

The proportion of senior individuals in India's population is rising, which is especially remarkable. Presently, the population's growth rate is exceeded by the number of elderly individuals (those 60 and over) by a triple amount (Sathyanarayana *et al.*, 2014).

Table 2 Educational qualification of the elderly

Educational qualification	(N=100)	Percentage (%)
Primary	41	41
Secondary	24	24
Senior Secondary	19	19
Graduation	6	6
Post-Graduation	1	1
Un educated	9	9
Total	100	100

### *Propagation of respondents based on educational qualification*

Table 2 shows the educational qualification of the respondents ranging from primary education to post graduation and un educated respondents were also taken for the study as it does not create any variance in study. It shows that among 100 respondents, 41% of them had primary education. Respondents with secondary education were 24%, 19% of them had education till senior secondary. Graduated respondents among 100 were only 6% and post- graduate respondent had the least number of only 1%. The respondents who were uneducated was 9% among the 100 respondents. The reason inquired during the survey for enrolment decline to secondary and senior secondary education comparative to primary education during that time was because fewer schools had secondary educational facilities, schools were too far away from their communities, there were fewer transportation facilities, so students had to walk to school, which was challenging for them, and people were also less aware of the value of education during that time.

Table 3 Source of income of the elderly

Pension	17	17
Savings	4	4
Farm and agriculture	1	1
Business	3	3
Given by children	11	11
House rent	1	1
Total	100	100

### *Propagation of respondents based on source of income*

Table 3 illustrates the financial source of respondents. 17% of them were pensioners, while 4% of respondents said they had savings. 1% of respondents in each category of farm & agricultural and housing rent were observed. 3% of respondents said their source of income is through their business. 11% of respondents reported having children as a source of income. 63% of the total respondent's report having no income.

Dasmaseela, M. A., 2019 substantiated that sixty-three percentage of respondents had no source of income this was the most common reason for dwelling in old age home. The place

is obviously similar to a home, where these old age people receive all the necessities needed for a routine living, such as food, clothing, and shelter. The 37% are found to have income source. Among the 37 percent, 17 percentage of them have annual income range between (0-50,000) INR. 11percent of them have annual income range between (50,001-1,00,000) INR. 8 percentage of them have annual income range between (1,00,001-2,00,000) INR. And only 1percent of respondent were having their annual income range between 2,00,001and above.

Table 4 Reason for dwelling in old age home

Reasons	N=100	Percentage (%)
No relatives	25	25
Children not supportive	48	48
Migration of children	10	10
Preferred to live alone	17	17
Total	100	100

#### Propagation of respondents based on Reason for dwelling in old age home

Table 4 shows various reasons for dwelling in old age home. 25% of the respondents reported that the were no relatives for them and they were orphans so they dwell in old age home. 48% reported that their own children are not looking after them and they were left helpless so they live in old age home. 10% of respondents live in old age home because of their children's migration. The number of young people traveling abroad for work and higher education has been rising quickly in recent years. Anecdotal evidence suggests that internal and external migration had made a substantial impact on elderly people's quality of life (Dasmales, M. A.,2019). And finally, 17 % respondents' dwell in old age home because they prefer to live alone. According to Rajkumari, 2021research, elderly people's decision to relocate into an old age home was influenced by their daughter-in-law's verbal abuse, their son's verbal abuse, their son's financial difficulties, the fact that they had no one to

care for them, a loss of self-respect, health issues, and financial difficulties.

#### Propagation of respondents based on prevalence of diseases

The (Table 5) reveals the disease condition of the geriatric individuals. 26% of the respondents have hypertension among which 10% belongs to the age group between 60-70 years, 7% belongs to the age group between 71-80 years, 9% belongs to the age group between 81-90 years. According to Franklin *et al.*, 2001, around age 55, more than 90% of people with normal blood pressure (BP) eventually develop Hypertension. About 60% of them have hypertension by the age of 60, and by the age of 70, roughly 65% of men and 75% of women have high blood pressure. 34% of the respondents have diabetes among which 13% belongs to the age group between 60-70 years, 13% belongs to the age group between 71-80 years, 8% belongs to the age group between 81-90 years.

There are numerous aging-related factors for diabetes and were linked to insulin resistance. They include the release of AVP (arginine vasopressin) or its C-terminal fragment, as well as central adiposity brought on by numerous environmental stressors (copeptin). Hypomagnesemia and vitamin D insufficiency have also been linked to the development of diabetes in the elderly. During aging, insulin secretion is also impaired (Chentli *et al.*, 2015). 6% of the respondents have heart diseases among which 2% belongs to the age group between 60-70 years, 3% belongs to the age group between 71-80 years, 1% belongs to the age group between 81-90 years, heart diseases are more prevalent as people age.

Among individuals 80 years and older, the prevalence of hypertension, congestive heart failure (CHF), coronary artery disease (CAD), arrhythmias, particularly atrial fibrillation, peripheral arterial disease, valvular heart disease, and stroke ranges from 79% to 86% in elderly people aged 80 and above. The major cause of death for adults over 65 is still cardiovascular diseases (CVD). Moreover, 82% of all deaths in patients 65 years of age and beyond are due to cardiovascular diseases (Lloyd-Jones *et al.*, 2009).

Table 5 Diseases conditions of the geriatric individuals

Diseases conditions	Percentage (%)						
	Age						P value
	60-70	71-80	t	81-90	91-100	t	
Hypertension	10	7		9	Nil		26
Diabetes	13	13		8	Nil		34
Heart diseases	2	3		1	Nil		6
Arthritis	Nil	1		1	Nil		2
Hearing loss (presbycusis)	Nil	Nil	0.356	1	1	0.362	2
Psoriasis	Nil	Nil		Nil	1		1
No comorbidity	16	5		7	1		29
Total	41	29		27	3		100

2% of the respondents have arthritis among which 1% belong to the age group between 71-80 years, 1% belong to the age group between 81-90 years, 2% of the respondents have presbycusis among which 1% belong to the age group between 81-90 years and 1% belong to the age group between 91-100 years. 1% of the respondents suffer from psoriasis belong to the age group between 91-100 years, and finally the remaining 29% of the respondents had no comorbidity and they are healthy.

The statistical significance was set at  $p \leq 0.05$ . If  $*(p \leq 0.05)$  it is significant and if  $** (p > 0.05)$  it is not significant.

t-test was performed to check the significant relationship of age and diseases prevalence of the individual. The table 5 represents that there was no significant relationship at 0.083

level ( $p > 0.05$ ). Therefore,  $H_0$  (Null Hypothesis) was rejected and the  $H_1$  (Alternate Hypothesis) was accepted.

According to Steyn *et al.* (2006) long exposure to unhealthy lifestyle was the major reason for higher levels of risk factors, such as hypertension, diabetes and obesity that act independently and synergistically.

#### Propagation of respondents based on Anthropometric measurements Propagation of respondents based on Body Mass Index

The (Fig 1) shows the Body mass index of the respondents. 17% of the respondents were underweight, 55% of the respondents were healthy having a normal BMI range, 21% of the respondents are in the pre obesity state, 6% of the

respondents are in stage 1 obesity and only 1% of the respondent was in obesity stage 2. Among this 100% of respondents 21% of respondents are over nourished and 7% of them are obese. The results reveal that majority of the respondents (55%) are healthy with normal range of Body Mass Index while the rest (45%) of the respondents are under and over nourished having a deviant BMI range.

In a similar study by Kiskac *et al.*, 2022 the BMI percentage of respondents shows that 16% of the respondents were below 24.9 which is under weight, In the stage of pre obesity 28% of the respondents were observed, 17% were in the stage of obesity grade 1 and 31% were found to be in the stage of obesity grade 2 and 8 were observed to be in BMI >40.

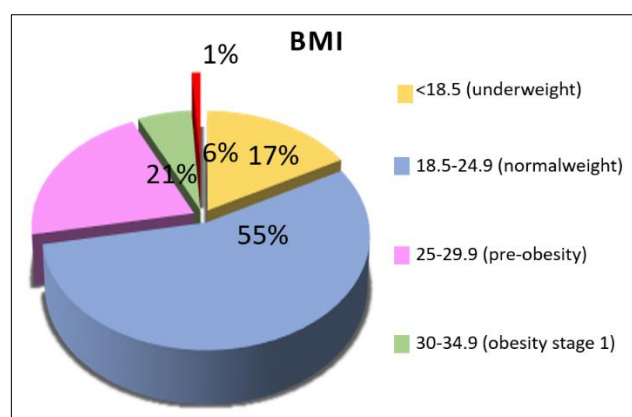


Fig 1 Body Mass Index (BMI) of the elderly

#### Propagation of respondents on Biochemical parameters Blood pressure measurement of the elderly

Table 6 Blood pressure of the elderly

Blood pressure	N=100	Percentage (%)
Below 120/below 80 mm/Hg	14	14
120-129/below 80 mm/Hg (Normal range)	46	46
130-139/80-89 mm/Hg	17	17
140 or </90 or < mm/Hg	23	23
Total	100	100

Age-related hypertension is linked to severe cardiovascular outcomes such as myocardial infarction, heart failure, stroke, and mortality. One third of the world's population is predicted to be affected by hypertension by 2025 as a result of an aging population and rising obesity rates. Mechanical hemodynamic alterations, arterial stiffness, neurohormonal and autonomic dysregulation, and deteriorating renal function all contribute to adverse outcomes in older persons (Oliveros, E.*et al.*, 2020).

Table 6 shows the blood pressure values of the respondents. Here 14% of the respondents have blood pressure lower than 120/80 mm/Hg that is below the normal range, 46% of the respondents have blood pressure values ranging from 120-129/80 mm/Hg that is normal range of blood pressure. 17% of the respondents have blood pressure ranging from 130-139/80-89 mm/Hg which is high blood pressure stage-1 and 23% of respondents have blood pressure ranging from >140/90 mmHg, that is high blood pressure stage-2.

In a similar study conducted by Ramakrishnan, S *et al.*, 2019 among elderly stated that the prevalence of hypertension was 30.7%. Except for those under 65 years old, where nearly equal percentages of men and women had hypertension, prevalence increased with age. In each age category, more men had hypertension than women.

#### Random blood sugar measurement of the elderly

The aged people with diabetes are rapidly increasing, which has a substantial influence on population health and the economy. The prevalence of diabetes will increase in the next 20 years as the population ages, even if diabetes incidence rates are to steady. Comparatively to any other age group, older people with diabetes are more susceptible to both acute and chronic microvascular and macrovascular complications of the disease, such as significant lower- extremity amputations, myocardial infarctions, visual impairments, and end-stage renal disease (Li, Yanfeng *et al.*, 2012). So, it is important to monitor and to maintain the levels of blood sugar in older people.

Table 7 reveals the random blood sugar of the respondents. 64% of the respondents have normal random blood sugar level of lesser than 99mg/dL. 24% of the respondents have random blood sugar ranging from 100-125 mg/dL (prediabetes) and 12% of the respondents have random blood sugar level ranging from >126 mm/dL (diabetes).

In a similar study conducted by (Jain & Paranjape, 2013) showed the percentage of diabetes in older population at a rate of 30.42 percent. 90 (50.56%) of them are men, while 88 (49.43%) are women. As a result, roughly equal proportions of both sexes are impacted, with the ratio being- (1:0.97).

Table 7 Random blood sugar of the elderly

Random blood sugar	N=100	Percentage (%)
<99 mg/dL (normal)	64	64
100-125 mg/dL (prediabetes)	24	24
126 or < mm/dL (diabetes)	12	12
Total	100	100

#### Hemoglobin measurement of the elderly

According to Smith, D.L. 2009 when Hb levels are less than 12 g/dl in older adults, anemia with an underlying cause is generally diagnosed.

Table 8 Hemoglobin of the elderly

Hemoglobin	N=100		Percentage (%)
	Male	Female	
Below normal value	24	55	79
Normal value	5	16	21
Total	29	71	100

Table 8 reveals the hemoglobin levels of the respondents in accordance with gender because both male and female's normal hemoglobin values differ. Male's normal value of hemoglobin ranges from 13-16 g/dL and female's ranges from 11-16 g/dl. Here 79% of respondents have below average levels of hemoglobin in which 24% are males and 55% are females and 21% of respondents have normal levels of hemoglobin in which 5% are males and remaining 16 % are females.

In the study conducted by Pathania *et al.*, 2019 anemia was present in 68.7% of the overall respondents, with mild anaemia accounting for 47.4% of cases, moderate anaemia for 47.0%, and severe anaemia for 5.6%. Men were more likely to have mild anaemia than women, who were 24.8% more likely. In people over 80, anaemia was twice as likely to occur as in people between 60 and 69.

Table 9 Blood Serum protein of the elderly

Blood Serum protein	N=100	Percentage (%)
Below 6 gms/dl	2	2
6.0-8.7 gms/dl (normal range)	97	97
above 8.7 gms/dl	1	1
Total	100	100



### Blood Serum protein measurement of the elderly

Protein energy waste (PEW), which is a condition in which the body's protein and energy stores are depleted, is one of the nutritional problems that can be diagnosed by measuring total serum proteins (TSP). During malnutrition, this can be led by the decreased intake of foods high in protein and energy (Sabatino *et al.*, 2017).

The table 9 shows the levels of blood serum protein of the respondents. In which (97%) majority of the respondents

have normal level of blood serum protein ranging from 6.0-8.7 gms/dl, 2% have blood serum protein below the normal range and 1% of respondents have blood serum protein ranging above the normal range (8.7 gms/dl).

In a similar study by Henko *et al.*, 2022 determined the TSP reference range with respect to gender, age, and region in Namibia. The reference range of TSP was 51–91 g/L for females and 51–92 g/l for males. A reduced TSP range of 48.00–85.55 g/l was established.

Table 10 Clinical assessment of elderly

Clinical assessment		N=100 Percentage (%)		
		Good	Fair	Poor
	General appearance	57	35	8
Hair	Condition of hair	67	23	10
Eyes	(Conjunctival pallor)	54	29	17
	Condition of lips	70	29	1
Mouth	Colour of the tongue	65	34	1
	Surface of the tongue	52	45	3
Skin	Skin appearance	60	34	6
	Texture of skin	38	8	54
Face	Face examination	66	5	29
Extremities	Oedema distribution	75	20	5
Abdomen	Alimentary system (appetite)	94	6	0
	Stools evacuation	90	4	6

### Propagation of respondents based on Clinical assessment of elderly through general examination

Clinical evaluations determine the health status of certain people or entire populations in connection to the foods they eat. This is the simplest and most useful approach. When two or more clinical symptoms that are predictive of a deficiency condition appear at once, their diagnostic value is significantly increased (Srilakshmi 2018).

As table 10 shows the clinical assessment of the elderly, 57% had good, 37% had fair and 8 % had poor general appearance. In the condition of hair 67% were good, 23% were fair and 10% had bad state. While the examination of Eyes (conjunctival pallor) 54% showed good, 29% were fair and 17% were poor. Condition of lips was examined and 70% were good and only minority of 30% were fair and poor.

Colour of the tongue showed only 65% were good and the remaining 35% were fair and poor. While in the examination of skin 60% of elderly had a good health over skin while 40% were fair and poor. In face examination 66% had good results with no swollen or moon face while the rest of 34 % were fair in it. In accordance with distribution of oedema 75% had no oedema and 20% had oedema in the dependent parts and 5% had severe oedema. While in the assessment of appetite 94 % had good appetite and 6 had fair appetite. On the basis of stool evacuation 90% had good evacuation and 4% had fair and 6% were in poor evacuation.

In a study conducted Patwardhan, Sunita. 2002, similar to the study stated that out of 180 respondents the age group of 60-62 years had shown higher clinical observation and was seen decreased by age and the age group between 68-70 had less clinical observations. The clinical assessment score was decreased, results stated that it was due to poor dietary intake and consumption of tobaccos and alcohol.

### Propagation of respondents based on Dietary preferences and habits of the elderly

Figure 2 shows the change in meal pattern of the respondents. When we asked the reason for the change in their

meal pattern 13% stated that it was due to their disease condition, 4% of respondents stated that they were on diet control, 24% of the respondents that due to aging (change in preferences of meal on to taste and flavour), 1% of respondents stated that it was due to their change in religion, and majority of 58% respondents had no change in their dietary pattern.

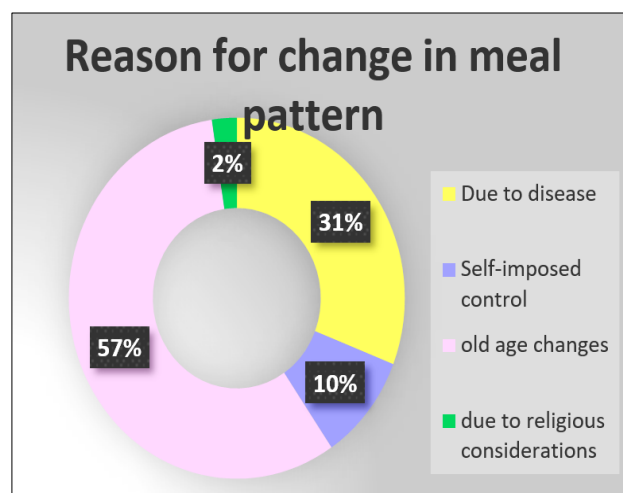


Fig 2 Reason for change in meal pattern of the respondents

As people age, they consume less food and alter their eating habits. Yet, reduced intakes of calcium, iron, zinc, B vitamins, and vitamin E have been linked to older people eating less food. Low calorie intakes or a diet with few nutrients may raise the risk of diseases linked to food. Age-related diseases also occur based on the amount of daily food and beverage consumption. Reduced energy intake may also be caused by age-related physiological changes such as slower stomach emptying, changed hormonal responses, a reduced basal metabolic rate, and altered taste and odour. By serving nutrient-dense meals, it may be possible to address numerous age-related nutritional problems (Drewnowski *et al.* 2001).

Table 11 Dietary intake of the elderly on different old age homes

Nutrients	OAH-1	OAH-2	OAH-3	OAH-4	P Value
Energy	1539.96	1601.3	1574.9	1338.95	0.4344 <sup>ns</sup>
Protein	60.61	60.125	49.74	41.48	
Fat	36.53	24.28	37.89	18.93	
Carbohydrate	249.96	263.45	188.52	222.71	
Dietary fibre	6.14	6.17	8.78	5.45	

#### Propagation of respondents based on 24-hour recall

Table 11 shows the 24-hour recall of the respondents in 4 Old Age Homes (OAH) taken for the survey to calculate the dietary intake.

A comparison t-test will be carried for the statistical analysis of the data.

In a similar study by Vinod Khole *et al.*, 2018 diet's average amount of carbohydrates was 205.34 grams, with a standard deviation of 56.56 grams. Men's intake was somewhat greater at 213.28 compared to women's intake of 199.03 60.06 grams. Males consumed carbs in amounts ranging from 162.06 grams to 264.5 grams. Females' intake ranged from 138.97 grams to 259.09 grams. Consequently, the elderly consumed between 148.78 grams to 261.9 grams of carbs on average. Similar amounts of protein were consumed in both situations, but when the subjects' ages, weights, and nutritional intake decreased, so did their protein intake. Their intake did not satisfy the criterion for the Recommended Dietary Allowance (RDA). Male intake ranged from 26.32 grams to 49.4 grams, while female intake fell between 22.64 grams and 46.68 grams. Intake of fats was higher in both situations; the daily average was roughly 45 grams of fat, with a standard deviation of 17 grams. Males' daily fat intake ranged from 28.58 grams to 62.36 grams. It ranged from 27.09 grams to 62.11 grams in females. Males consumed an average of 1400–1800 calories per day, whereas females consumed 1300–1800 calories per day.

Paired t-test was used to statistically analyze the dietary intake of the elderly in old age homes.

\*The statistical significance was chosen at  $p \leq 0.05$ . If  $*(p \leq 0.05)$  it is significant and if  $**(p > 0.05)$  it is not significant.

From the above table 11, it was statistically not significant at 0.4344 level ( $p > 0.05$ ). It interprets that there was no significant difference of dietary intake between the individuals dwelling in various old age homes. Therefore, H<sub>0</sub> (Null Hypothesis) was rejected and the H<sub>1</sub> (Alternate Hypothesis) was accepted.

## CONCLUSION

This study attempted to infer the nutritional status of the elderly dwelling in old age homes. The major reason for elderly

people to dwell in old age home was their dependency on the basis of income and they were fed by the charity trust of the old age homes. The urbanization and change in life style has made many children to migrate for different reasons, decreased tolerance level of their children to take care of their elderly parents had made many elderlies to dwell in old age homes. When compared to men, women were majority in number. The reason inquired during the survey stated that insecurities, financial dependency, migration of children as the major reason. The present investigation proves that there was no significant relationship between disease prevalence and age of the respondents. This could depict that the life style changes were the major reason for the disease prevalence among elderly. Hence this study revealed that the elderly had good nutritional status and their dietary intake was also found to be satisfactory. The dietary intake was likely the same in all 4 old age homes and the elders were given nutritious diets. So, this study sensitizes about the nutritional status of elderly community living in old age homes.

#### Limitations of the study

- The study was limited only to Chengalpet district of Tamil Nādu and was based on smaller sample size. Hence, the findings of the study could not be generalized.
- Although best efforts were made by the researcher to establish rapport and to receive frank responses from the respondents, but free and frank answers were not forthcoming. Thus, there might be some limitations about the accuracy in reporting the facts.

#### Suggestions for further research

- Research should be encouraged on health care services for the geriatrics population made available by the administration; health education provider etc.
- Similar studies need to be conducted in different areas of Chengalpet and other states of the India as well, in order to study the regional variations in different aspects of the geriatric well-being.
- Research is needed on the biological, social and behavioural aspects in the aging process.

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