

A Comparative Study of Food Consumption Pattern of Elderly Individual Living in Family Setting and in Old Age Home

Aaradhya¹, Dr. Mahuwaa Chaudhary²

¹Student of M.Sc. Food & Nutrition, Department of Home Science, Meerut College, Meerut (UP)

²Assistant Professor, Department of Home Science, Meerut College, Meerut (UP)

Abstract

Ageing is accompanied by physiological, psychological, and social changes that influence dietary intake and nutritional status, while living arrangements may further affect food consumption patterns among older adults. The present study was conducted to compare the food consumption patterns, dietary diversity, and nutrient intake of elderly individuals living in family settings and old-age homes in Meerut district, Uttar Pradesh. A comparative cross-sectional study was carried out among 60 elderly individuals aged 60 years and above, including 30 participants residing with their families and 30 living in old-age homes. Participants were selected using a purposive sampling technique. Data on socio-demographic characteristics, meal patterns, food frequency, and dietary intake were collected through a structured questionnaire and Food Frequency Questionnaire (FFQ). Nutrient intake was estimated and compared with the Recommended Dietary Allowance (RDA), and the data were analyzed using descriptive statistics. The findings revealed that the majority of participants belonged to the 70–80 years age group. Elderly individuals living in family settings exhibited greater dietary diversity and higher consumption of pulses, milk, fruits, vegetables, and other food groups than those residing in old-age homes. The mean daily energy intake was 2045 kcal among family-dwelling elderly individuals and 1900 kcal among old-age home residents, while the mean protein intake was 74.0 g and 68.75 g, respectively, both exceeding the recommended dietary allowance. Overall, the study indicates that living arrangements influence dietary practices among older adults, with family settings providing a more favorable environment for maintaining a diverse diet. Regular nutritional assessment, dietary counseling, and appropriate nutrition intervention programmes, particularly in old-age homes, are recommended to improve nutritional status, promote healthy ageing, and enhance the quality of life of the elderly.

Keywords: Elderly, Food Consumption Pattern, Food Frequency Questionnaire, Nutritional Status, Old-Age Homes.

1. Introduction

The global population is ageing rapidly, leading to an increasing prevalence of age-related health challenges. Older adults, generally defined as individuals aged 65 years and above, commonly

experience chronic diseases, functional decline, and social isolation, all of which adversely affect their nutritional status. Age-related physiological changes, including reduced metabolic rate, diminished appetite, impaired sensory perception, and decreased energy requirements, often result in lower food intake. Although energy needs decline with age, adequate protein intake and sufficient vitamins and minerals remain essential for preserving muscle mass, preventing frailty, and maintaining overall health “[3]”.

Nutritional status among older adults is influenced by multiple demographic, socioeconomic, and psychosocial factors, including age, gender, living arrangements, income, food accessibility, oral health, medication use, nutrition knowledge, and psychological well-being “[2]”. Living environment also plays a significant role in determining health outcomes. Older adults residing with families often benefit from stronger social interactions and community participation, whereas those living in old-age homes may experience better psychological well-being due to companionship with peers of similar age. Conversely, stressful family relationships and inadequate caregiving may negatively affect mental health and dietary practices “[8]”.

Studies have consistently reported that the dietary intake of older adults frequently falls below the Recommended Dietary Allowances (RDA), increasing the risk of malnutrition and its associated adverse health outcomes “[11]”. Malnutrition in the elderly is multifactorial and, if not identified and managed early, contributes to functional decline, poor quality of life, and increased morbidity. Effective management requires a multidisciplinary approach that addresses both medical and social determinants of nutrition “[10]”. Furthermore, psychological health has been shown to influence dietary behaviour, with better mental health being associated with healthier eating patterns “[1]”.

Considering the influence of living arrangements on dietary intake and nutritional status, the present study aims to assess the socio-demographic profile, meal patterns and meal frequency using a Food Frequency Questionnaire (FFQ), estimate nutrient intake and compare it with the Recommended Dietary Allowances (RDA), and identify the factors influencing food consumption patterns among elderly individuals living with their families and those residing in old-age homes.

2. Methodology

The present comparative cross-sectional study was conducted among elderly individuals residing in selected urban and semi-urban areas of Meerut district, Uttar Pradesh. A total of 60 participants aged 60 years and above were included in the study, comprising 30 elderly individuals living with their families and 30 residing in old-age homes. Participants from old-age homes were selected from Khalsa Help Foundation, Ganga Nagar, Meerut, and Shree Swami Satyanand Ji Sevadham, Meerut Cantonment, while participants living with families were selected from nearby residential areas using a purposive sampling technique.

Data were collected through face-to-face interviews using a pre-tested structured questionnaire incorporating a Food Frequency Questionnaire (FFQ). The standard (National Institute of Health) “[5]”, questionnaire was used to obtain information on socio-demographic characteristics, meal patterns, meal

frequency, dietary intake, and food consumption practices. Elderly individuals aged 60 years and above who were physically and mentally capable of responding, available during the data collection period and willing to participate were included in the study. Individuals who were critically ill, bedridden, hospitalized, below 60 years of age, or unwilling to participate were excluded.

The collected data were compiled and analyzed using descriptive statistical methods, including frequency, percentage, mean, and standard deviation. The results were presented in the form of tables, graphs, and charts to compare the food consumption patterns of elderly individuals living in family settings and old-age homes.

3. Result and Discussion

The findings of the present study, which compared the food consumption patterns of elderly individuals living in family settings and old-age homes using the Food Frequency Questionnaire (FFQ), are presented below. The results are organized according to the study objectives and include socio-demographic characteristics, meal patterns and eating habits.

3.1 The socio demographic profile of elderly individual living in family setting and old age home

Socio-demographic characteristics such as age, education and family structure strongly affect the living conditions and well-being of elderly individuals.

Table 3.1 Age-Wise Distribution of Elderly Individuals Living in Family Settings and Old-Age Homes

Age (Years)	Family Settings (%)	Old Age Home (%)
60-70	36.6	23.3
70-80	40	50
80-90	23.3	26.6

Table 3.1 shows the age-wise distribution of elderly individuals living in family settings and old-age homes. In both groups, the majority of participants belonged to the 70–80 years age group, accounting for 40.0% in family settings and 50.0% in old-age homes. The 60–70 years age group comprised 36.6% of participants in family settings and 23.3% in old-age homes, while the 80–90 years age group represented 23.3% and 26.6%, respectively. Overall, elderly individuals aged 70–80 years constituted the largest proportion of the study population in both settings.

Table 3.2 Educational Status of Elderly Individuals Living in Family Settings and Old-Age Homes

Education Status	Family Settings (%)	Old Age Homes (%)
Below 10th	40	33.3
10-12th	26.6	23.3
Graduation	20	23.3
Post-graduation	13.3	20

Table 3.2 presents the educational status of elderly individuals living in family settings and old-age homes. In both groups, the highest proportion of participants had an education level below the 10th standard, accounting for 40.0% in family settings and 33.3% in old-age homes. This was followed by 10th–12th education (26.6% and 23.3%, respectively). Graduates constituted 20.0% of participants in family settings and 23.3% in old-age homes, while postgraduates accounted for 13.3% and 20.0%, respectively. Overall, the findings indicate that most participants had a relatively low level of educational attainment in both settings.

That the majority of elderly individuals in both family settings (40.0%) and old-age homes (33.3%) had an educational status below the 10th standard, indicating a relatively low level of educational attainment. Similar findings were reported by “[7]”. who emphasized that the nutritional vulnerability of older adults is influenced by socioeconomic and environmental factors, including family life, caregiving, environmental health, food security, and economic status. The lower educational status observed among the participants may limit nutrition awareness and access to health-related information, thereby affecting their dietary practices and nutritional well-being.

3.2 Meal patterns and meal frequency by using a Food Frequency Questionnaire (FFQ) of elderly individuals of both groups

Table 3.3 presents the food frequency consumption pattern of elderly individuals living in family settings. Cereals were the staple food, with 80.0% of participants consuming them 2–3 times per day, while 60.0% consumed pulses at the same frequency. Milk was consumed once daily by 96.6% of the participants, indicating regular dairy intake. Green leafy vegetables, roots and tubers, other vegetables, and fruits were generally consumed once or 2–3 times daily, reflecting an adequate intake of plant-based foods. Regular consumption of fats/oils and sugar was also observed, with 46.6% of participants consuming these items more than four times per day. In contrast, meat and alcohol were consumed infrequently, whereas 60.0% of the participants reported consuming tea and coffee 2–3 times per day.

Table 3.3 Food Frequency Consumption Pattern of Elderly Individuals Living in Family Settings (FFQ) in percentage

Food group	Never or <1/Month	1- 3/Month	1\Week	2- 4/Week	1\Day	2- 3\Day	4+\Day
Cereals				13.30	6.60	80	
Pulses			6.60	30	3.30	60	
Meat		10	3.30	13.30			
Milk					3.30	96.60	
Green Leafy Vegetable			30	20	33.30	16.60	
Roots & Tuber				30	50	20	
Other Vegetable				23.30	53.30	20	3.30

Fruit					53.30	43.30	3.30
Fats/Oils					50	3.30	46.60
Sugar					20	33.30	46.60
Alcohol	6.60	10					
Tea/Coffee					23.30	60	16.60

Table 3.3 indicates that cereals, pulses, milk, fruits, and vegetables were consumed regularly by most elderly individuals living in family settings, suggesting that staple foods formed the major component of their daily diet. However, frequent consumption of fats, sugar, and carbonated beverages was also observed, which may adversely affect long-term health. These findings are consistent with “[4]”. Who reported that achieving optimal nutritional status among older adults living at home depends on understanding their lifelong food preferences and dietary habits. The authors further emphasized that individualized nutritional care, social support, and opportunities for shared meals are essential for promoting healthy eating behaviours and maintaining nutritional well-being among the elderly.

Table 3.4 presents the food frequency consumption pattern of elderly individuals residing in old-age homes. Cereals were consumed 2–3 times per day by 60.0% of the participants, while 80.0% reported consuming pulses once daily. Milk was consumed once daily by 86.6% of participants. Green leafy vegetables, other vegetables, and fruits were consumed once daily by all participants (100.0%), indicating a regular intake of plant-based foods. Roots and tubers were consumed 2–3 times daily by 53.3% of the respondents. All participants reported consuming fats and oils more than four times per day, whereas sugar intake was distributed across 2–4 times per week (46.6%), once daily (13.3%), and 2–3 times daily (40.0%). Meat and alcohol were not consumed by any participant, while 80.0% reported consuming tea or coffee once daily.

Table 3.4 Food Frequency Consumption Pattern of Elderly Individuals Living in old age home (FFQ) in percentage

Food group	Never or <1/Month	1-3 /Month	1\Week	2-4 /Week	1\Day	2-3\Day	4+\Day
Cereals					40	60	
Pulses				20	80		
Meat					0		
Milk					13.30	86.60	
Green Leafy Vegetable					100		
Roots & Tuber					46.60	53.30	
Other Vegetable					100		
Fruit					100		
Fats\Oils						100	

Sugar				46.60	13.30	40	
Alcohol					0		
Tea/Coffee				20	80		

3.3 Comparative overview of food consumption pattern among elderly individuals living in family setting and old age home

The food consumption pattern of elderly individuals varies according to their living environment, which influences food availability, meal choices, and dietary habits. The following section presents a comparative analysis of food consumption patterns, dietary diversity among elderly individuals residing in family settings and old-age homes.

Table 3.5 demonstrates that elderly individuals living in family settings had higher mean food frequency scores for most food groups, including pulses, milk, fruits, green leafy vegetables, roots and tubers, and other vegetables, indicating greater dietary diversity than those residing in old-age homes. Cereal consumption was slightly higher among participants living in old-age homes, while meat and alcohol consumption were negligible in both groups. These findings are consistent with the systematic review by“[9]”. which reported that greater dietary diversity is associated with improved nutritional status, physical function, cognitive health, and healthy ageing among older adults. Furthermore“[12]”. demonstrated that living arrangements significantly influence dietary patterns, with family support and reduced loneliness contributing to healthier food choices and better diet quality. Similarly“[6]”. emphasized that social, psychological, behavioural, and environmental factors collectively influence food intake and nutritional status in older adults, highlighting the importance of supportive living environments for maintaining healthy dietary practices. Collectively, these findings suggest that family settings may provide a more favourable environment for achieving a diverse and balanced diet among elderly individuals.

Table 3.5 Comparison of Mean Food Frequency Scores of Elderly Individuals Living in Family Settings and Old-Age Homes

Food group	Family setting Mean ± SD	Old age home Mean ± SD
Cereals	6.86 ± 1.07	7.66±1.02
Pulses	2.23 ± 0.50	1±0
Meat	0.4 ± 0.93	0±0
Milk	2.83 ± 0.37	1.7±0.46
Green leafy vegetable	1.46±0.57	0.83±0.37
Roots & tuber	1.56 ± 0.56	0.83±0.37
Other vegetable	1.83 ± 0.46	0.9±0.30
Fruit	2.2 ± 0.61	1±0
Fats/oils	5.16± 1.41	0.73±0.44
Sugar	5.96 ± 1.51	1.6±0.49
Alcohol	0.2 ± 0.48	0±0

Tea/Coffee	2.73 ± 0.82	2 ± 0
------------	-----------------	-----------

Figure 3.1 Comparison of Mean Daily Energy Intake of Elderly Individuals Living in Family Settings and Old-Age Homes with Recommended Dietary Allowance (RDA)

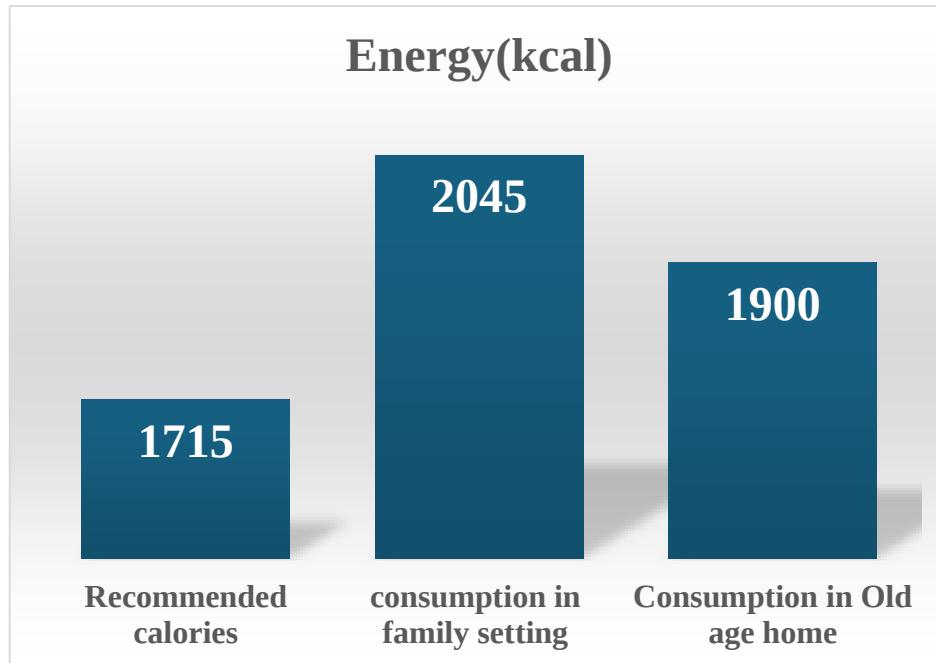


Figure 3.1 compares the mean daily energy intake of elderly individuals living in family settings and old-age homes with the Recommended Dietary Allowance (RDA). The mean energy intake of elderly individuals living in family settings was 2045 kcal/day, followed by 1900 kcal/day among those residing in old-age homes, whereas the recommended energy intake was 1715 kcal/day. Both groups consumed energy above the recommended level; however, participants living in family settings had a comparatively higher mean energy intake than those living in old-age homes.

The higher mean energy intake observed among elderly individuals living in family settings may be attributed to greater food availability, family support, and more diverse meal choices compared with those residing in old-age homes. These findings are in agreement with “[9]”, who reported that greater dietary diversity is associated with improved nutritional adequacy and healthy ageing among older adults. Similarly, “[12]”, found that favourable living arrangements and stronger social support positively influence dietary intake and overall diet quality in the elderly. Furthermore, “[6]”, emphasized that dietary intake in older adults is shaped by multiple factors, including social, behavioural, and environmental influences, highlighting the importance of supportive living environments in maintaining optimal nutritional status. Although the energy intake in both groups exceeded the recommended level, the overall nutritional quality and balance of the diet remain equally important for preventing obesity and age-related chronic diseases.

Figure 3.2 Comparison of Mean Daily proteins Intake of Elderly Individuals Living in Family Settings and Old-Age Homes with Recommended Dietary Allowance (RDA)

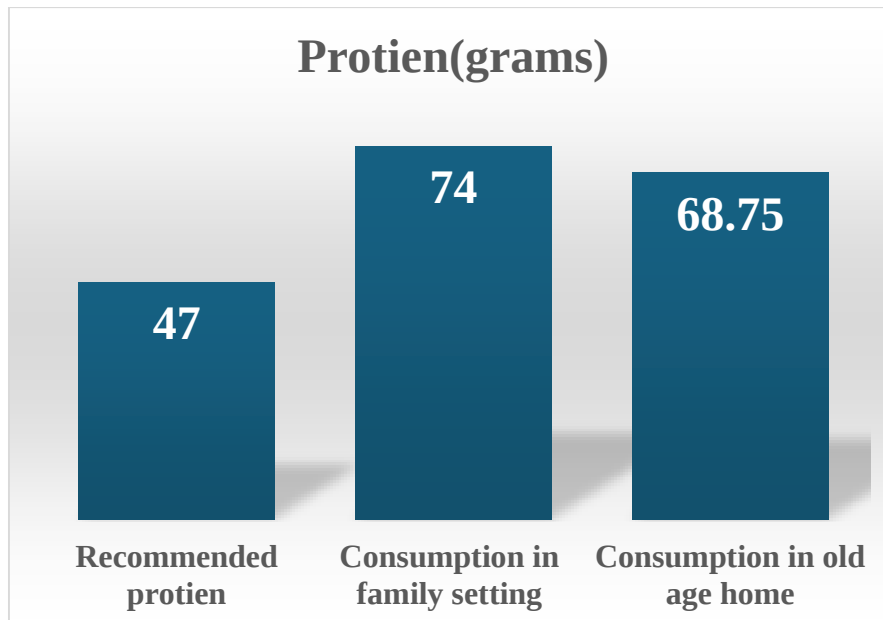


Figure 3.2 illustrates the comparison of mean daily protein intake among elderly individuals living in family settings and old-age homes with the Recommended Dietary Allowance (RDA). The mean protein intake was 74.0 g/day among elderly individuals living in family settings and 68.75 g/day among those residing in old-age homes, both of which exceeded the recommended intake of 47.0 g/day. Although protein intake was higher among participants living in family settings, both groups consumed an adequate amount of protein to meet the recommended dietary requirement.

The adequate protein intake observed in both groups may contribute to the maintenance of muscle mass, physical function, and overall health during ageing. However, continuous monitoring of dietary quality remains essential to ensure balanced nutrient intake and prevent age-related malnutrition. These findings are in line with “[11]”, who emphasized the importance of regular nutritional assessment among elderly individuals, particularly those residing in old-age homes. The authors recommended periodic geriatric nutrition assessments and timely nutritional interventions to improve health outcomes and advocated for strengthening policies and programmes focused on the nutritional well-being of the geriatric population.

4. Conclusion

The present study demonstrated that living arrangements have a significant influence on the food consumption patterns of elderly individuals. Compared with residents of old-age homes, elderly individuals living in family settings exhibited greater dietary diversity and higher consumption of several food groups, including pulses, milk, fruits, and vegetables. Although the mean energy and protein intake of participants in both settings met or exceeded the Recommended Dietary Allowance (RDA), differences in dietary practices and food choices were evident. These findings highlight the importance of family support, social environment, and access to a variety of foods in promoting healthy dietary behaviours among older adults. Regular nutritional assessment, dietary counselling, and

appropriate nutrition intervention programmes, particularly in old-age homes, are essential to improve the nutritional status, quality of life, and healthy ageing of the elderly population.

References

1. Aimee W. C., Lukasz W., Caroline M., Psychological factors influencing the eating behaviours of older adults : A systematic review. *Ageing research reviews*, 2022, 77(2022), 1568-1637. DOI : 10.1016/j.arr.2022.101597.
2. Anoushka S., Yashwinee B.I., Rajesh J.,“An Analysis of the Contributors and Factors Influencing Dietary Patterns among the Elderly Population”, *Current Research in Nutrition and Food Science*, 2022, 10 (3), 895-903. DOI:<https://dx.doi.org/10.12944/CRNFSJ.10.3.7>.
3. Barbara S.V.M., Hanneke A.H.W., Jung S.L., Denise .H., Trisha H., Tamara B.H., Stephen B., Anne B.N., Marjolein V.,“Poor Appetite and Dietary Intake in Community-Dwelling Older Adults”, *The American Geriatrics society*, 2017, 65 (10), 2190-2197.
4. Ellinor E., Albert W.,“Home living elderly people’s views on food and meals”, *Journal of aging research*, September 2012, 2012 (1), 1-9. DOI :10.1155/2012/761291.
5. Food Frequency questionnaire from https://biolince.nhlbi.nih.gov/media/studies/framoffspring/Forms/Exam%203%20Food%20Frequency%20Questionnaire.pdf?link_time=2018-08-11_23:58:42.966309
6. Kaori K., Kanae F., Ryoka K.,“Dietary Intake Characteristics in Older Adults :A Sytematic Review of Physical, Social, Psychological, and Behavioural Limitation”, *The Journal of Aging Research & Limitation*, February 2026, 15. <https://doi.org/10.1016/j.jarlif.2026.100064>.
7. Olayiwola I.O., Ketiku A.O.,“Socio demographic and nutritional assessment of the elderly yorubas in Nigeria”, *Asia pacJclinnutr*, 2006, 15 (1), 95-101.
8. Rishi P., Manisha K., Prashant S., Saurav K.,“A study on quality of life between elderly people living in old age home and within family setup”, *Open Journal of Psychiatry & Allied Sciences*, 2015, (6), 127-131. DOI : 10.5958/2394-2061.2015.00010.5.
9. Roghayeh M.G., Maryam R., Beitullah A.,“Association between dietary diversity and healthy aging: a systematic review”, *BMC nutrition*, 2025, 11 (102), 2-17.
10. Sakineh N.S., Turkan K.M., Peyman M.,“Assessment of The Nutritional Status And Affecting Factors of Elderly People Living At Six Nursing Home In Urmia, Iran”, *International Journal of Academic Research*, 2011, 3 (1), 173-181.
11. Sonam S., Priyanka S.,“Nutritional Intake of Elderly People among Different Old Age Homes”, *Journal Nutrition Science Research*, 2023, 8 (4), 1-3.
12. Yaping Hu., Jiangyan X., Xiaoxiao L.,“The impact of living arrangements on dietary pattern among older adults: the mediating effects of loneliness and anxiety”, *Frontiers public health*, March 2025. DOI 10.3389/fpubh.2025.1519564.