

## NUTRITIONAL INTAKE OF ELDERLY PEOPLE AMONG DIFFERENT OLD AGE HOMES

Sonam Sinha<sup>1</sup>, Priyanka Shankar<sup>2</sup>

<sup>1</sup>PG Student, Department of Food and Nutrition, School of Home Science, Babasaheb Bhimrao Ambedkar University (A Central University), Lucknow, Uttar Pradesh, India

Mail ID – [sonam01sinha03@gmail.com](mailto:sonam01sinha03@gmail.com)

<sup>2</sup>Assistant Professor, Department of Food and Nutrition, School of Home Science, Babasaheb Bhimrao Ambedkar University (A Central University), Lucknow, Uttar Pradesh, India

Mail ID – [priyankamdc10000@gmail.com](mailto:priyankamdc10000@gmail.com)

**Abstract**

Elderly is any person above the age of 60 years. India's elderly population is currently around 104 million out of which 51.1 million and 52.8 million are males and females respectively. Human aging is a complex phenomenon involving biological, physiological, psychological and social changes that contribute to poor health. Nutrition plays an important role as a decisive factor contributing to human well-being and quality of life. This is a cross-sectional descriptive study conducted at different old age homes of Lucknow city. The tools used for this study included sociodemographic profile, health profile, 24-hr dietary recall of a single day and anthropometric measurement. For anthropometric measurement, height was measured using Stadiometer and Weight was measured using weighing balance. This was followed by calculating the Body Mass Index (BMI) of the participants. An average consumption of 1205 Kcal to 1557 Kcal energy was observed in case of males and 949 Kcal to 1376 Kcal in case of females. According to the Recommended Dietary Allowance (RDA), their intake did not meet the requirements. The protein intake in females is little close to the reference value, whereas the protein intake in male is low than the required value. The energy, carbohydrate and fat intake of all the subjects are low than the reference RDA value. 58% of the studied population are malnourished, either they are undernourished or over nourished. 26% of the total studied population are underweight. This shows that there is a great need to work on the nutritional status of elderly people among old age homes to prevent malnutrition and to improve their nutritional intake for healthy living. Geriatric Nutrition Assessment should be included and monitored from time to time and thus calls for further research in the field of geriatric nutrition. Regular monitoring and intervention can improve the health outcomes of the elderly.

**Keywords:-** Nutrition, Elderly, Old Age Home, Recommended Dietary Allowance, Body Mass Index.

**Introduction**

In January 1999, the Government of India adopted the "National Policy on the Elderly", which defined "elderly" or "elderly" as any person above the age of 60 years. India's elderly population is currently around 104 million out of which 51.1 million and 52.8 million are males and females respectively. And is expected to reach 323 million by 2050. The elderly contributes of about 8.6 percent of the entire population, out of which 8.2 percent are males and 9 percent females. The World Health Organization defines health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity".<sup>1</sup>

Healthy aging is defined by the World Health Organization (WHO) as "the process of developing and maintaining functional capacities that contribute to human well-being in old age" with functional ability made up of an individual's intrinsic capacity (a sum of all physical and mental capacities), their relevant ecological characteristics and the interactions between these.<sup>2</sup>

Human aging is a complex phenomenon involving biological, physiological, psychological and social changes that contribute to poor health. Childhood is the first age period after birth, followed by childhood, adolescence, adulthood, then middle age, and the final stage is old age.<sup>3</sup> These stages of human life are irreversible and old age is logically the final stage or "last stage of the life cycle". In old age, there are mainly dependency factors.<sup>4</sup> related to economic and decision-making aspects. Although old age is not a disease in itself, many diseases, especially non-communicable diseases, are common in the elderly due to deterioration of the body and decline in functional abilities. Chronic diseases such as diabetes, coronary heart disease and high blood pressure are usually associated with old age. Older adults also experience loss of appetite, difficulty chewing and swallowing, which in turn reduces

overall calorie and nutrient intake.<sup>5</sup> Therefore, for the elderly population, a well-balanced diet with essential nutritional requirements is essential to maintain health and effectively improve independence and a high standard of daily living.<sup>6</sup>

Everyone's health and well-being depend on a variety of factors, such as physical, social, psychological and nutritional factors. Nutrition plays an important role as a decisive factor contributing to human well-being and quality of life. In general, it can be said that the health status of a population is determined by the economic and human development of the places where it lives. Likewise, economic development is determined by individual health, which proves that there is a causal relationship. The Centers for Disease Control (CDC) and other groups are conducting important research to demonstrate the important relationship between food choices (intake) and health problems such as hyperinsulinemia, high blood pressure, dyslipidemia, coronary heart disease, and type 2 diabetes. This proves that nutrition is an important aspect in determining the health status of the individual.<sup>7</sup>

#### Objectives

1. To assess nutritional status among the elderly population aged  $\geq 60$  years living in old age homes.
2. To assess and compare the dietary intake of elderly living in old age homes with the recommended dietary allowance (RDA).

#### Materials and Methods

This is a cross-sectional descriptive study conducted at different old age homes of Lucknow city. The four selected functional old age homes were namely Cheshire Homes, Happy Parents Home, Samarpan Old Age Home and Siddhi Welfare Society. During the time of study, there were respectively 24, 32, 42 and 12 elderly individuals staying at selected old age homes. Only the elderly above 60 years of age were included in the study. Altogether 110 elderly individuals were staying at the selected old age homes however; only 50 elderly individual (above 60 years) were included in the study considering the inclusion criteria of study. Mentally compromised people and those with cognitive impairment and with the presence of severe neurodegenerative disease were excluded. The study was conducted in between January 2023 to April 2023. The data were collected using the interview method and anthropometric measurements. Semi- structured questionnaire was used to gather socio-demographic characteristics, health condition and nutritional information of the participants. The tool used for this study included sociodemographic profile, health profile, 24-hr dietary recall of a single day. For anthropometric measurement, height was measured using Stadiometer and Weight was measured using weighing balance. This was followed by calculating the Body Mass Index (BMI) of the participants. The collected data were analyzed using IBM SPSS vs. 20 and MS-Excel 20016. Written consent from old age homes and verbal consent from all the participants was taken prior to interview and assessment. None of the participants were forced to participate and confidentiality of the information gathered was assured.

#### Result and Discussion

A total of 50 respondents were included in the study out of which 46 percent (n=23) were females and 54 percent (n=27) were males. The range began with 60 years and the oldest elderly was 94 years.

**Table 1. Nutrient intake of elderly on the basis of 24hour dietary recall method**

|               | Male      |                 | Female    |                |
|---------------|-----------|-----------------|-----------|----------------|
| Macronutrient | Mean (gm) | Range           | Mean (gm) | Range          |
| Carbohydrate  | 236.3428  | 191.096-326.708 | 219.6722  | 191.096-255.09 |

|                |          |                 |          |                |
|----------------|----------|-----------------|----------|----------------|
| <b>Protein</b> | 50.38836 | 40-57.259       | 44.0103  | 37.165-47.259  |
| <b>Fat</b>     | 25.78007 | 17.6-31.324     | 24.64174 | 17.6-27.618    |
| <b>Energy</b>  | 1340.194 | 1205.44-1557.22 | 1263.896 | 949.35-1376.29 |

**Table 2. Comparison of observed nutrient intake with Recommended Dietary Allowance**

|                     | Male          |                                          | Female        |                                          |
|---------------------|---------------|------------------------------------------|---------------|------------------------------------------|
| <b>Nutrient</b>     | <b>R.D. A</b> | <b>Observed Mean <math>\pm</math> SD</b> | <b>R.D. A</b> | <b>Observed Mean <math>\pm</math> SD</b> |
| <b>Energy</b>       | 1700 Kcal     | 1340.19 $\pm$ 122.85                     | 1500 Kcal     | 1263.90 $\pm$ 141.86                     |
| <b>Carbohydrate</b> | 276.25 gm     | 236.34 $\pm$ 46.57                       | 243.75 gm     | 219.67 $\pm$ 19.88                       |
| <b>Protein</b>      | 54.0 gm       | 50.39 $\pm$ 6.25                         | 45.7 gm       | 44.01 $\pm$ 3.92                         |
| <b>Fat</b>          | 37.7 gm       | 25.78 $\pm$ 5.12                         | 33.3 gm       | 24.64 $\pm$ 4.45                         |

The 24-hour dietary recall for 1 single day was carried out to calculate the dietary intake. The food prepared was standardized by using measuring cups and spoons to get accuracy. The items in the menu were calculated according to the ingredients that were used and sum of all the macronutrients i.e., carbohydrates, proteins, fats and energy was summed up. All the recalls were entered and mean of their macronutrient and energy intake was calculated. The table above enlists the details with variation in males and females.

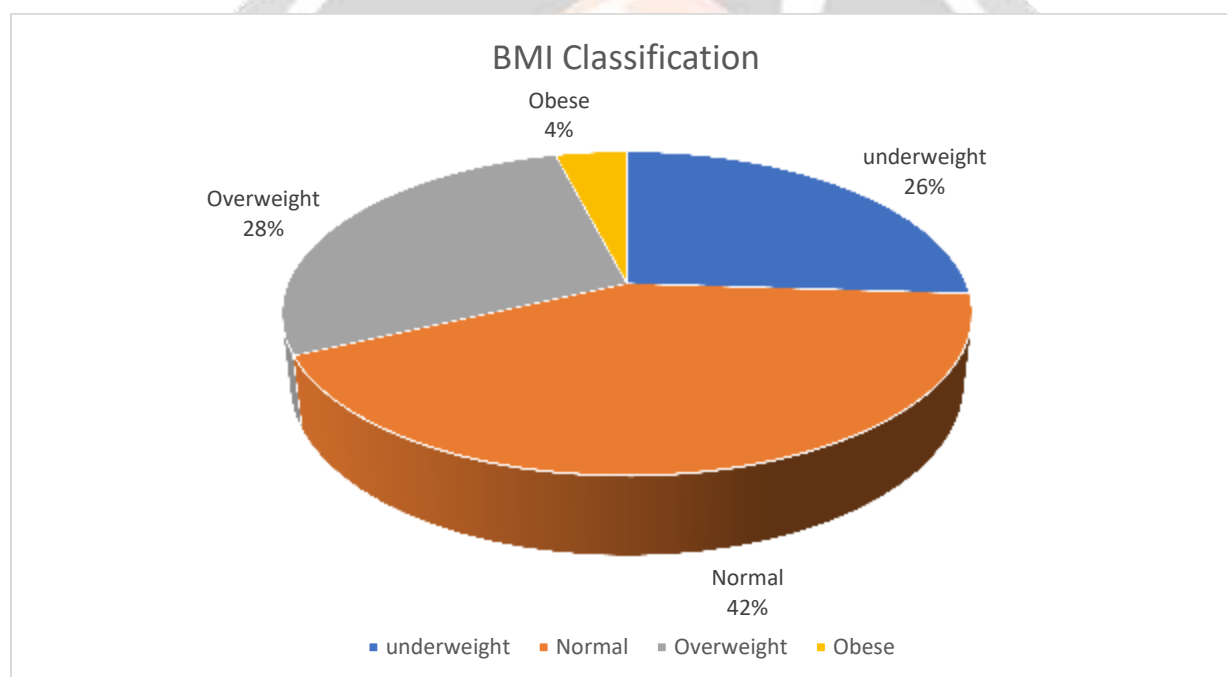
In case of carbohydrates the diet had an average of 236.34 grams with standard deviation of 46.57 grams in case of males. Whereas in case of women it was 219.67 $\pm$  19.88 grams. Protein intake was average of 50.39 grams in male and 44.01 gram in female and with increase in age and reduction in weight and dietary intake there was a reduction of the protein intake in their diet. In case of fat the average intake was average of 25.78 grams in male where the intake in female was average of 24.64 grams. An average consumption of 1205 Kcal to 1557 Kcal energy was observed in case of males and 949 Kcal to 1376 Kcal in case of females. According to the Recommended Dietary Allowance (RDA), their intake did not meet the requirements.

Considering their dietary intake, the RDA for any adult (elderly) in India constitutes to 55-65 percent, 15-20 percent and 20-25 percent of carbohydrate, protein and fat intake respectively. The results show that the percentage of the macronutrients intake is not within the prescribed RDA.

The protein intake in females is little close to the reference value, whereas the protein intake in male is low than the required value. The energy, carbohydrate and fat intake of all the subjects of both the genders are low than the reference RDA value and their intake did not meet the proper requirements for elderly.

**Table 3. Distribution of subjects according to their nutritional status through BMI Classification**

| BMI Classification | Male   |            | Female |            | Total  |            |
|--------------------|--------|------------|--------|------------|--------|------------|
|                    | Number | Percentage | Number | Percentage | Number | Percentage |
| Underweight        | 5      | 18.5%      | 8      | 34.8%      | 13     | 26%        |
| Normal             | 14     | 51.8%      | 7      | 30.4%      | 21     | 42%        |
| Overweight         | 8      | 29.6%      | 6      | 26%        | 14     | 28%        |
| Obesity Grade I    | -      | -          | 2      | 8.7%       | 2      | 4%         |



**Fig 1. Frequency of elderly people on the basis of the BMI Classification.**

Out of the entire population, it was seen that 42% elderly had normal nutritional status. The rest were malnourished in the form of underweight, overweight or obese. This malnourished population constituted of 29 participants which contributed to 58% of the entire sample which was high in number. About 26% were underweight, 28% overweight and 4% obese in the entire sample. It can be observed that a greater number of females (34.8 percent) were underweight compared to males (18.5 percent). Considering the overweight category males were more (29.6 percent) as compared to females (26 percent).

## Conclusion

Ageing is process which begins right from the time of birth and the process cannot be altered, but it can be regulated and monitored for a better health outcome. Health outcome can be observed through the social, physical and mental wellbeing of any individual.

In this study we conclude that 58% of the studied population are malnourished, either they are undernourished or over nourished. 26% of the total studied population are underweight.

According to the comparison of observed nutrient intake with Recommended Dietary Allowance (RDA), their intake did not meet the requirements. The protein intake in females is little close to the reference value, whereas the protein intake in male is low than the required value. The energy, carbohydrate and fat intake of all the subjects of both the genders are low than the reference RDA value.

This shows that there is a great need to work on the nutritional status of elderly people among old age homes to prevent malnutrition and to improve their nutritional intake for healthy living.

As this study was carried out in old age homes, more such empirical research needs to be done to assess nutrition status among the elderly. Geriatric Nutrition Assessment should be included and monitored from time to time and thus calls for further research in the field of geriatric nutrition. Regular monitoring and intervention can improve the health outcomes of the elderly. This also calls for revision of policies and schemes concentrating on the geriatric population.

## Acknowledgements

I would like to acknowledge all the members living in the Old Age Homes for their time and sharing their information. And the director of the old age homes and the department of Food and Nutrition of Babasaheb Bhimrao Ambedkar University who allowed me to conduct this survey and research work.

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