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ORIGINAL RESEARCH ARTICLE

Nutritional Needs of Older People in Tansen Palpa, Nepal

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ABSTRACT

Geriatric population forms a significant proportion of our total population. Hence, various problems affecting the overall health of the elderly need special consideration. In this context, study was undertaken to assess nutritional need of 189 elderly men and women of 60 to 80 years old age groups of Tansen municipality. Data on demographic profile was collected using close and open ended questionnaire. Nutritional status was assessed using anthropometric measurements of height, weight, and body mass index (BMI). Information on dietary profile was collected by 24 hour dietary recall method. Socio-demographic data of geriatric people of high, middle and low income groups revealed that majority of the subjects were married. A greater percentage of upper middle income groups resided in a joint family and were from Hindu religion. Majority of respondents (47.1%) revealed BMI of acceptable range which was 18.5- 24.9. Nutrient intake data of elderly of all the age groups (60-80yrs) men revealed lower consumption of energy but female had higher intake, whereas protein and fats intake were higher when compared to the RDA and vitamin intakes were lower in all age group. Food habit and dietary pattern revealed that majority were non vegetarian and use to take breakfast + lunch + tea + dinner and 34.4 per cent of respondents skipped meal, out of that 22.2 per cent skipped breakfast.

Key words: Nutrition, RDA, BMI.

INTRODUCTION

Many industrialized countries now have ageing populations, mostly as a consequence of declining fertility and mortality in later life. Globally the proportion of older persons, defined as aged 60 years or over, has risen from 8% in 1950 to 11% in 2007, and is expected to reach 22% in 2050. Nutritional status has increasingly been associated with variety of morbid conditions including cancer, heart disease and dementia among in persons over the age of 65.

This study was conducted with the objectives of assessing body mass index and food habit. Assessing the dietary pattern and compare daily nutrients consumption with recommended dietary allowances. Nutrition is the sum total of the processes involved in the taking in and the utilization of food substances by which growth, repair and maintenance of the body are accomplished. It involves ingestion, digestion, absorption and assimilation. Nutrients are stored by the body in various forms and drawn upon when the food intake is not sufficient [1]. Nutrition is an important determinant of health of all age including aging group.

Aging is part of living. Every human has the choice of aging healthfully or living with sickness and poor quality of life. In the coming years, human aging will be one of the biggest challenges faced by industrialized countries. Because the average life expectancy is continuously increasing, one may be faced with spending more years in poor health [2]. Both the number and the proportion of older persons - defined as aged 60 and over - are growing virtually in all countries, and worldwide trends are likely to continue unabated. By 2025, the number of older persons worldwide is expected to reach more

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than 1.2 billion, with about 840 million of these in low-income countries [3].

With the growing age everyone has special need and requirement of nutrition so the nutritional needs of elderly people are generally similar to those of younger adults but it is determined by multiple factors including specific health problems and organ system compromise, level of activity, energy expenditure, and caloric requirements. Older people, like everyone else, need energy and a balanced diet. They should limit (but not cancel) their consumption of fats, sugar and salt. The digestive process slows down with age, so older people need smaller, more frequent meals than younger people. Five or six small, non - fatty meals a day are better than one or two big meals. Energy requirements, however decline with increasing age particularly if physical activity is restricted. Protein is important at this stage of life for sustaining a healthy immune system and preventing muscle wasting. Older people should eat high quality protein such as egg white, lean meat, poultry and fish. Soy products (such as tofu) , beans, lentils and nuts are key protein sources for vegetarians. Two portions of protein foods a day are recommended. Fiber and water help to prevent constipation. Fiber is found in whole grains such as brown bread, whole cereals and brown rice, as well as fruit and vegetables. Older people sometimes lose the ability to feel thirsty and can become dehydrated, especially in warm climates. They should be encouraged to drink 1-1.5 liters of water or other fluids (such as soups or fruit juices) every day. Micronutrients (minerals and vitamins immune system and reduce the risk of chronic disease. Key micronutrients are: Calcium (from milk, yogurt, cheese and green leafy vegetables) is essential to maintain good bone health. It is recommended that older people eat at least three portions of dairy foods every day (four to five portions after the age of 75). Vitamin D helps to absorb calcium. The main natural source is sunlight, but it is also found in eggs, milk and oily fish (such as sardines, salmon, herring and mackerel). Iron is important for general health, as it is used by the body to make red blood cells. Sources include red meat, liver, beans and lentils. Vitamin C helps to repair the body and absorb iron. It is found in fruit and vegetables, especially citrus fruit and green vegetables and other vitamins and minerals are important, such as vitamin A for vision, B-complex vitamins, vitamin K, magnesium, zinc and iodine. It is important that older people and their carers know what foods contain these micronutrients, so that even if a person is eating less, they are getting the micronutrients they need. If the diet is balanced and the person is healthy, there will be no deficiency [4].

As inadequate nutrition causes many problems in old age group one of them is malnutrition which can be defined as the state of being poorly nourished. It is more common in elderly persons than in younger adults. Ageing itself, however, neither leads to malabsorption nor to malnutrition with the exception of a higher frequency of atrophic gastritis in older persons. Malnutrition in elderly people is therefore a consequence of somatic, psychic or social problems. Typical causes are chewing or swallowing disorders, cardiac insufficiency, depression, social deprivation and loneliness. Undernutrition is associated with a worse prognosis and is an independent risk factor for morbidity and mortality. Awareness of this problem is therefore important. An improvement in the nutritional status can be achieved by simple methods such as the preparation of an adequate diet, hand feeding, additional sip feeding or enteral nutrition [5].

Malnutrition is associated with significantly increased morbidity and mortality in independently living older people. There are many causes of malnutrition. These include:

Reduced intake: Poor appetite due to illness, food aversion, nausea or pain when eating, depression, anxiety, side effects of medication or drug addiction Inability to eat: This can be due to investigations or being held nil by mouth, reduced levels of consciousness; confusion; difficulty in feeding oneself due to weakness, arthritis or other conditions such as Parkinson's Disease, dysphasia, vomiting, painful mouth conditions, poor oral hygiene or dentition; restrictions imposed by surgery or investigations.

Lack of food availability: poverty; poor quality diet at home, in hospital or in care homes; problems with shopping and cooking.

Impaired absorption: This can be due to medical and surgical problems effecting digestion and stomach, intestine, pancreas and liver / or absorption.

Altered metabolism: Increased or changed metabolic demands requirements related to illness e.g. Cancer; surgery, organ dysfunction, or treatment.

Excess losses: Vomiting; diarrhoea; nutrient fistulae; stomas; losses from nasogastric losses tube and other drains or skin exudates from burns [6].

MATERIALS AND METHODS

A community based descriptive study was conducted in Tansen Municipality, of Palpa district in Nepal purposely with random sampling of 5 wards out of 15 wards and the respondents were selected according to proportionate sampling technique and first respondent from each ward was selected with pen drop sampling method and then snow ball sampling technique. Data were collected by face to face interview technique with the preparation of interview schedule and necessary pretesting from Jan first to Feb last 2013. The respondents were 189 from the age group of 60 -80 years old people who were not mentally ill, bed ridden, unable to listen, speak and not suffering from dementia.

Data Analysis

Collected data were analyzed through SPSS version 16. Analyses of data include simple mean and standard deviation.

RESULTS

Table 1: Distribution based on Age of the Respondents

Age in years	Frequency	Percentage
60- 65	72	38.1
66- 70	50	26.5
71- 75	40	21.2
76- 80	27	14.3
Total	189	100.0

(**Table 1**) shows that majority of respondents (38.1%) were in the age group of 60 - 65 years followed by age group 66 -70 years (26.5%), 71 -75 years (21.2%) and 14.3 per cent were 76-80 years age group.

Table 2: Gender wise distribution

Gender	Frequency	Percentage
Female	110	58.2
Male	79	41.8
Total	189	100.0

(**Table 2**) shows that the majority of respondents (58.2%) were female and (41.8%) were male.

Table 3: Distribution based on Socioeconomic Status

Socioeconomic Status	Frequency	Percentage
Lower class	10	5.3
Upper lower class	43	22.8
Lower middle class	35	18.5
Upper middle class	99	52.4
Upper class	2	1.1
Total	189	100.0

(**Table 3**) shows that the majority of respondents (52.4%) were from upper middle socioeconomic status, 22.8 per cent upper middle class, 18.5 per cent form lower middle, 5.3 per cent from lower class and 1.1 per cent were from upper socioeconomic status.

Table 4: Kitchen garden at house hold

Kitchen garden	Frequency	Percentage
Yes	107	56.6
No	82	43.4
Total	189	100.0

(**Table 4**) shows that 56.6 per cent respondents had kitchen garden at their house hold.

Table 5: Distribution based on Body Mass Index

BMI	Frequency	Percentage
< 18.5	12	6.3
18.5 - 24.9	89	47.1
25 - 29.9	65	34.4
> 30	23	12.2
Total	189	100.0

(**Table 5**) shows that maximum BMI (47.1%) range from 18.5 -24.9, 34.4 per cent range from 25 -29.9, 12.2 per cent range >30 and 6.3 per cent were <18.5.

Table 6: Distribution based on Food Habit of the Respondents

Food habit	Frequency	Percentage
Vegetarian	42	22.2
Non vegetarian	145	76.7
Eggetarian	2	1.1
Total	189	100.0

(**Table 6**) shows that majority of respondents (79.7%) were non vegetarian, 22.2 per cent were vegetarian and 1.1 per cent were eggetarian.

Table 7: Distribution based on Dietary Pattern

Dietary pattern	Frequency	Percentage
Breakfast + lunch + dinner	16	8.5
Breakfast +lunch + tea + dinner	170	89.9
Breakfast +midmorning+ tea + dinner	2	1.1
Breakfast +midmorning +lunch +dinner +bed time	1	.5
Total	189	100.0

(**Table 7**) shows that maximum number of respondents' (89.9%) dietary pattern was breakfast + lunch + tea + dinner.

Table 8: Distribution based on Skipping of Meals

Skipping of meals	Frequency	Percentage
Yes	65	34.4
No	124	65.6
Total	189	100.0

(**Table 8**) shows that majority of respondents (65.6%) did not skipped meals.

DISCUSSION

This was the first of its kind of study of nutrition in the old age group conducted in Tansen. In this study majority of respondents (38.1%) were in the age group of 60-65 years. As the population of Asia is growing both larger and older, it is estimated that the number of Asians aged 65 and older will have grown fourfold from about 250,000,000 to about 1 billion by 2050 (UN 2007). Female population is getting more than male population; In this study majority of respondents 58.2 per cent were female. With the growing older population women comprise the majority of older population in all countries largely because globally women live longer than men. By 2025, both the proportion and number of older women are expected to be from 107 to 373 million in Asia. According to religion wise distribution, majority of respondents (81%) were from Hindu religion. In Nepal Hindu families' cultural pattern is still very supportive for senior citizen. The education of the respondents was poor, as most of them were illiterate (23.8%). The high illiteracy can be explained by the fact that all the respondents had reached adulthood. This study finds that the married couples were 60.8 per cent which is very much supportive to each other to share and care in this age. In this study maximum numbers of respondents (78.8%) were from joint family. It is important for good care and support as well as for the nutritional requirement; joint family seems to be more supportive. The socioeconomic status is very much important asset in old age. In this study majority of respondents (52.4%) were from upper middle socioeconomic status, which shows that they were not bound to limitation for food access. Most of the respondents (56.6%) had kitchen garden.

Basic metabolic index determine the nutritional status of any person, in this present study the majority of respondents (47.1%) had BMI range of 18.5-24.9 which shows that most of the respondents had an acceptable nutritional status, where as obese (BMI > 30) were 12.3 per cent and 12.3 per cent were under weight (<18.5). Malnutrition can be significant if a person has BMI less than 20kg/m^2 and unintentional weight loss greater than 10% within the last 3-6 months. BMI 18.5-24.9 is normal. (Olayiwali and Ketiky 2011) also found in their study that according to BMI more than half of the respondents had acceptable nutritional status with BMI between 18-25 (63%male and 58% female) whilst 15 per cent of male and 14 per cent of female were under weight with BMIs below 18 and 13 per cent of males had severe malnutrition. Food habit and dietary patterns is also important subject in old age. In this study 76.7 per cent were non vegetarian and 89.9 per cent had the dietary pattern of breakfast + lunch + tea + dinner. Only 34.4 per cent of respondent skipped meal out of that 22.2 per cent had skipped breakfast.

The respondents in this present study consuming cereal and pulses daily were 62.4 per cent, green leafy vegetables consumption 41.3 per cent which was also on daily basis where as 97.4 per cent consumed other vegetables daily. 40.7 per cent respondents consumed fruits occasionally, meat and poultry consumption 29.6 per cent 1-2 times a week. Fats and oil consumption was 97.9 per cent which was daily and the respondents consuming sugar and sweets daily were 75.1 per cent. 47 per cent respondents used to drink nutritional drink occasionally. (Amasheh 2009) stated in his study that high dietary intake of fruits and vegetables are associated with reduced disease risk.

24 hrs dietary recall method can estimate an average nutritional requirement of a person. This study has revealed that there is excess intake of calorie in age group of 60-65 years old females where as deficient in men. In age group 66-70 years old there is deficient intake of calorie in both genders. In age group 71-75 years female have excess intake of calorie but there was deficient intake of calorie in men of same age group and another age group 76-80 years of both gender. This present study revealed that intake of protein and fat are excess than RDA of all four age groups and both gender, where as intake of vitamins are deficient except in the age group of 76-80 years old male. The excess of protein and fat may be because of intake of more milk and most of the respondents were non vegetarian. On the evaluation dietary consumption most of the respondent had consumed cereals and pulses, sugar and fat on daily basis. (McAdams 2011) stated in his study that fat is not the only component of food that can end up as fat in body. When consumed excess calories from any source, including sugar and other carbohydrates body converts those extra calories into a storage form of

fat known as triglycerides. Triglycerides travel through blood to be deposited in fat cells. Like cholesterol, the level of triglycerides in blood is a key factor in determining risk for heart disease. When diet contains too much fat or calories there is not room for good stuff vitamins, minerals, fiber and other disease fighting substances found only in fresh fruits, vegetables, whole grains and legumes and seafood.

CONCLUSION

The study revealed that majority of respondents were from age group of 60-65 yrs and most of them were female. Majority of respondents were from Hindu religion and the socioeconomic status was upper middle class and from joint family.

According to food habit and dietary pattern majority of respondents was non vegetarian and the dietary pattern included breakfast + lunch + tea + dinner. Most of the respondents consumed cereals and pulses on daily basis where as fruits occasionally, green leafy vegetables daily. Majority of female respondents of age group 60-65 years had excess intake of calorie than RDA where as male respondents had deficient intake. Intake of vitamins in both age group were deficient as compared to RDA and excess intake of protein and fat.

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