Assessment of Nutritional Status of Senior Citizens (60 years and above) in Sialkot

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ABSTRACT

Objective: To assess the nutritional status of the senior citizens of 60 years age and above and to determine the factors affecting the nutritional status of the senior citizens of 60 years age and above.

Study Design: Descriptive Cross Sectional Study

Place and Duration of Study: This study was conducted at the Department of Community Medicine, Sialkot Medical College, Sialkot from March 2020 to September, 2020.

Materials and Methods: Two hundred senior citizens aged sixty years and above living in Sialkot were interviewed through a questionnaire, using anthropometric measurements, 24-hours recall and clinical examination.

Results: The nutritional status of the elderly living in the joint family system and having some source of income was better than those who were jobless and living in the nuclear family system. Average calories intake per day by males was 2325 and 2175 in females. The average protein intake per day was 49 gm by males and 44 gm in females. These values are less than the recently calculated national values of 60 gm by Pakistan Economic Survey 2019-20. The average intake of caloric consumption calculated for the respondents were well below the National Recommended Daily Allowance[1].

Conclusion: The study revealed that the respondents with joint family system get better nutritional care and social support. Since work participation in Pakistan is predominantly by male, financial contribution is much higher by elderly males rather than elderly females.

Key Words: Nutritional Status, Senior Citizens, Elderly, Meal

INTRODUCTION

In recent years, there has been a sharp increase in the number of old people worldwide, mostly as a consequence of declining fertility, improved health care facilities and reduced mortality rates. Globally the proportion of elderly, has risen from 8% in 1950 to 11% in 2007, and is expected to reach 22% in 2050. By 2025, the number of elderly worldwide is expected to reach more than 1.2 billion, with about 840 million of these in low-income countries. Rapid demographic aging is a growing public health issue in many low- and middle-income countries.

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The factors underlying this transition are increased longevity, declining fertility, and aging of "baby boom" generations[1].

Pakistan is ranked as sixth most populous country in the world. It is estimated that 7% of the population (about 14 million) is over 60 years of age. Alarmingly, it is expected to reach 8.5% and 12.9% in 2030 and 2050 respectively[2].

Food is one of the major sources of enjoyment and social satisfaction for older persons. Economic and social problems such as loneliness, low income, inadequate facilities, and lack of transportation also interfere with adequate food and good nutrition for the elderly and ill[3]. The dietary requirements during old age are less than those of adults as the basal metabolic requirement of the former are reduced.[4]

The principle aim in nutritional assessment of a community is to mop out the magnitude of malnutrition as a public health problem and to discover and analyze the ecological factors. In longitudinal studies, the selected members or families in a community are kept under continually systematic surveillance for at least one year. Such studies provide valuable information not only about the annual incidence of malnutrition but also show seasonal variation caused by climate, the availability of food, community activities and other factors. In cross sectional studies, a satisfactory sample

of the population is examined for prevalence of malnutrition, which provide information about most of the acute conditions and also do not reflect sectional variations.

In Pakistan the total number of elderly is expected to increase from 7.3 Millions in 1990 to 26.84 Millions in 2025. Elderly population is growing at a faster than the total population as longevity has increased in the recent years.

Pakistan's demographic trends show that the projected life expectancy will increase to 72 years by 2023. WHO report (1998) projected that 5.6 % of Pakistan's population was over 60 years of age, with a probability of doubling to 11 % by the year 2025[5].

A community based cross sectional study was carried out among the rural population of nine major states of India. The inadequacy (< 70 % of RDI) of intake was high with respect to leafy vegetables, milk and milk products, fats, oils, sugar and gajjery. The inadequacy of intake of micronutrients was high among both genders. The poor intake of diet was reflected in high prevalence of chronic energy deficiency (CED) among the rural elderly[6].

MATERIALS AND METHODS

The senior citizens, aged sixty years and above and living at home in Sialkot city participated in this study. The subject selection was conducted by dividing the city into fifteen sectors. The five sectors were selected by balloting. Each sector has about 200-400 households. A cluster of 30 household was selected, using the "cluster of 30 household methods". A minimum of 30 senior citizens were identified and interviewed in each of these five clusters of households. The inclusion criteria were: age 60 years and above and the residents of Sialkot.

The exclusion criteria were: age less than 60 years, not willing to participate and not residents of Sialkot. The delimitations were limited time and resources. Biochemical assessment was not possible due to limited financial resources.

Data Collection and Data Analysis: The principal investigators and two trained interviewers visited all the subjects, usually during day light. An ethnographic field guide was developed and applied before this survey questionnaire. The data was entered in the computer after manual data cleaning, using SPSS version 27 and was analyzed on SPSS version 27. The sorting of data was done and main domains identified. The main results are presented as means with standard deviations. The cross-tab of different important values was done. A *p*-value of < 0.05 was considered significant.

RESULTS

The 65.5% of the respondents were males. The main age group interviewed was of 60-69 years, which included 83.4% of the males. The less participation from females would be the social reasons.

The majority of the respondents were illiterate, i.e. 56%. Most of the male respondents (46.5%) were enjoying their retired life and were drawing the pension benefits, the only source of income. There was a statistically significance (P<0.05) difference in the uptake of both proteins and calories between jobless and other groups of occupations. They were living mostly in the joint family system, which still prevails especially for the senior citizens. Statistical tests were applied to find out the difference between different family groups. A statistical significance difference was observed between nuclear and joint families (P=0.001) in relation to caloric intake. No statistical significance difference (P=0.231) was observed between two groups in relation to protein intake.

The BMI of the 76% of them was in between 20-24.9 kg/m2, which is the desirable weight. Only 12% were in the malnourished category and 4% were in the group of severe obesity. The common diseases prevalent among them were hypertension, diabetes mellitus, and gynecological problems in females. It was also revealed that no particular attention is given to give supplements like vitamins, minerals and protein concentrates to them. The most (71%) of them were taking three meals/day and 51% of them at regular times. The 80% were dependent on their family for food availability. It means that families do take care of them. The 15% of them had noticed current weight loss but were not aware of its impacts. On the other hand, 26% of them noticed some physical change in body like bleeding, change in bowel habits and urinary pattern, fainting and headache. Only 6% were having regular cigarette smoking.

Usually three meal/ day were eaten i.e. a morning meal (breakfast), a mid-day meal (lunch) and an evening meal (dinner). The individual food intakes were converted into nutrients using Food Composition Tables for Pakistan (revised 2001). The food items reported and their ingredients consumed by each of the respondents were added up for the whole day. The daily sum of these food items was then converted into nutrients to estimate daily intake. The average per capita consumption levels of food intake calculated from the most common staple diet. Almost all took cereal as part of their meal. The 84% of them were eating roti every day at meals, while the rest used rice, the second commonly consumed cereal. Roti was the staple item taken with a curry (made of vegetable, meat or dal), chattni or lassi. The socioeconomic conditions of a household and its locations determine the meal composition. The intake of cereals in 85.5% of respondents was 300-319 gm/person/day. This is less than the average intake of cereals calculated at national level i.e. 342 gm/person/day {National Nutritional Survey (NNS), 2018}.

The dal (pulses) was again a common component of the usual diet of the study population. The consumption of pulse and legumes in the majority of the respondents, 56%, were 20-29 gm/person/day, almost consistent with the average calculated by the National Nutritional Survey 2018.

The consumption of ghee and edible oils was less than 20 gm/person/day in 37% and 20-29 gm/person/day in 58% of respondents. The average consumption of ghee/edible oil has been estimated as 28 gm/person/day in the above said survey. The 41% of the senior citizens were using vegetable oils, near to the estimation done by NNS, i.e. 45%.

The average daily intake of meat, beef and chicken was 60-69 gm/person/day in 62.5%. It is estimated as 72 gm/person/day in NNS. About 30-35% of the respondents consumed chicken meat at least once a week while 20-25% of them were eating meat twice. The consumption of eggs was 11-14 gm/person/day by 81% while of milk and milk products was 70-89 gm/person/day by 64% of them.

The sugar was a common food item and an important source of calories in the respondents. The 68.5% were consuming 40-59 gm/person/day on average, same as of NNS, i.e. 50-55 gm.

The cereals contribute about 58% (1200) of the total calorie intake. The caloric share by fats and sugars are 13% (260) and 10% (200) each. The animal source contributes about 12% (240), pulses 3% (60), vegetables 2% (40) and 2% by others,

Anemia was obvious clinically from nails of 51% and from eyes of 25.5%. The thyroid enlargement was present in 4.5% and skin was pallor and/swollen in 11% of them.

DISCUSSION

Free-living human beings almost never eat exactly the same meal twice. Therefore to measure the reliability of a measurement method may confound measurement error with variety in diet[7,8]. This problem is acute in measuring of single meal or 24-hrs intakes in which large amounts of within-subject variability may be seen. As for validity, it is often assumed that high correlations with other instruments designed to measure the same variable indicate a valid instrument[9,10]. Burke (1947) pioneered the development of methodology for assessing dietary intakes including 24-hour recall method[11].

Data regarding the elderly and their risk of malnutrition using the Mini Nutritional Assessment Tool was obtained from six countries including Pakistan. Iran had the least percentage of elderly at risk of malnutrition (38.7%) and Bangladesh had the highest at 62%[12,13]. The data from Pakistan revealed 43.3 % at risk of malnutrition. The sample sizes varied from n=102 to n=850 and elderly were assessed from a range of locations e.g. the community and in hospitals [14,15].

Average calories and protein intake of both male and females were compared. No statistical significant difference was seen between both genders. Average calories intake/day by males was 2325(95% Cl 2295-2355) while in females the caloric intake per day was 2175 (95% Cl 2151-2199). The average protein intake per day by males was 49 gm (95% Cl 35.60-62.40) while in females it was 44 gm (65% Cl 29.60-58.40). These values are less than the recently calculated national values of 2534 and 65.8 gm respectively by Pakistan Economic Survey 2019-20. The National Recommended Daily Allowance (RDA) of calories for men and women are 2550 and 2160 respectively[14,15]. The average intake caloric consumption calculated for the respondents were well below the RDA.

CONCLUSION

The statistical analysis showed that the nutritional status of jobless and of those living as nuclear family was less than those having some source of income or living in joint families. This study revealed that the respondents with joint family system get better nutritional care and social. In fact the family or the close relative provides the main source of physical, emotional and monetary support to the elderly in all regards. Thus the traditional solidarity between generation, which work through the institution of family and gets emphasis from religious and cultural values, has contributed to keep the average joint family household on the higher side. Our social and cultural norms also favour the joint family system but this traditional system of living in our society has weakened due to urbanization of our society.

Author's Contribution:

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Conflict of Interest: The study has no conflict of interest to declare by any author.

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