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Nutrition Knowledge and Dietary Practice among the Elderly at Biratnagar Metropolitan City, Nepal

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ABSTRACT

Introduction: A balanced diet is one that has appropriate amounts of all important elements in the proper quantities to maintain optimal health. Due to the physiological changes that occur in the body as one ages, good nutrition is especially crucial for the elderly. Noting its importance, this study attempted to assess the status of the level of knowledge, and practice of balanced diet intake among the elderly population in Biratnagar.

Methods: A descriptive cross-sectional study was conducted in Biratnagar Metropolitan City, Ward no.1, Nepal after the ethical clearance from Institutional Review Committee. Wards and study participants were selected using simple random sampling and convenience sampling respectively. A total of 196 elderly people actively participated, and data was collected using a semi-structured questionnaire through interviews. The collected data was entered and analyzed through Epi-data and SPSS version 20.

Results: Although all respondents had heard of a balanced diet, the majority of them (49.5%) had inadequate knowledge about it, and 58.2% had poor practice.

Conclusions: Diets and lifestyles that reduce the risk of disease and increase the chances of healthy aging are especially important for older people. Dissemination of Information, Education, and Communication (IEC) materials on healthy eating, the benefits of healthy eating, food pyramids, and plates for the elderly can be promoted through the mobilization of Female Community Health Volunteers (FCHVs).

Keywords: *Balanced diet; Elderly; Knowledge; Practice.*

INTRODUCTION

Adequate diet and proper nutrition play an important role in developing resistance of elderly people against infection and various immune-related diseases. The functioning and health of the elderly depend on their nutritional status and food security, which is the foundation of nutritional health.[1] Furthermore, studies have shown that the elderly population with compromised nutritional status exhibits a burden on healthcare infrastructure.[2]

Nepal, being a developing country has been experiencing a rapid increase in its aging population. As families migrate abroad in search of opportunities, the trees of traditional family support are eroded, leaving the elderly facing health and social challenges. Although the number of older people who are experiencing problems in many ways is increasing, research on diseases in general as well as diseases specific to this group of people is limited.[3] Thus, this study aimed to assess the status of the level of knowledge and practice of balanced diet intake in the elderly population.

METHODS

A descriptive cross-sectional study was conducted among 196 elderly in Biratnagar Metropolitan City (Ward no 1, Pokhariya) after ethical clearance from the Institutional

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Review Committee of Nepal Institute of Health Sciences (Ref no. 17/77). Written informed consent was taken from the head of the family of each respondent. The elderly population between 60 to 74 years of Biratnagar ward no-1 were included whereas the elderly above 75 years and those having health issues as well as mentally disturbed elderly were not included in the study.

The sample size was determined by using Cochrane Formula for descriptive cross-sectional studies.

Sample size (n) = z^2pq/d^2

= $(1.96)^2 0.5*0.5/ (0.07)^2$

= 196

Where,

Prevalence (p) = 0.5 (50% prevalence was taken as there wasn't any relevant study done in Nepal)

q= 1-p = 1-0.5 = 0.5

Confidence Interval (CI) =95%, Z= 1.96

Margin of error (d) = 7% =0.07

The sample size for the study was 196. The respondents for the study were selected by using convenience sampling while the wards were selected using a simple random sampling technique.

The data was collected using face-to-face interview techniques with a semi-structured questionnaire. Questions on practice regarding the 24-hour dietary recall method were done. The variables of the study were knowledge and practice of balanced diet intake in the elderly and sociodemographic factors. The level of knowledge and practice of balanced diet intake was determined by using a scoring method.

Scoring:

Level of knowledge: In calculating the balanced diet knowledge scores, one mark was given to every correct response whereas no mark was given to an incorrect or unsure response. The lowest possible score was 0 while the highest was 46. The raw scores were then converted to percentages. The nutrition knowledge was categorized as:

- Good (>75%),
- Moderate (51-74%),
- Poor (0- 50%) [4]

Practice of balanced diet: The questions about balanced diet practices were asked by taking 24-hour dietary recall. We took five food groups to see the practice of the elderly, which were:

- Fruits and vegetables
- Starchy foods (Grains, rice, wheat, maize, potatoes, barley)
- Dairy (cheese, milk, yogurt)
- Protein (Pulses, meat, eggs, fish)
- Fat (plant-based oils like vegetable, rapeseed and olive oil)[5]

Elderly who ate these sources of food in 24-hr were considered to have followed the proper practice of balanced diet while those not consuming these foods were regarded to have followed improper practices. Upon asking the respondents, the responses were: Yes, practice regularly, and No.

Accuracy of the obtained information and its completeness was ensured. The collected and edited data were entered into Epidata and the analysis was done using SPSS version 20 software.

RESULTS

We found out that all the respondents had heard about a balanced diet where the majority (43.9%) had moderate knowledge of a balanced diet but more than half (58.2%) were found to have followed improper practices.

Table 1. Status regarding balanced diet (n=196)

Knowledge level	n(%)
Poor	97(49.5)
Moderate	86(43.9)
Good	13(6.6)
Practice level	
Improper practice	114(58.2)
Proper practice	82(41.8)

Table 2 shows that more than half of the participants (53.1%) were between the age group 70-74 years and were male (58.7%). More than two-thirds of participants (75%) were married with the vast majority of them following Hinduism (94.4%) as their major religion. About 59.7% were Brahmin and only 36.2% were illiterate. A major proportion of respondents (42.7%) were found to be living with their spouse and children with a major source of their family income from private office (29.6%) and business (25.5%) where 50% of respondents had monthly income more than NPR.20000.

Table 2. Socio-demographic characteristics (n=196)

Socio-demographic variables	n(%)
Age(in years)	
70-74	104(53.1)
65-69	48(24.5)
60-64	44(22.4)
Gender	
Male	115(58.7)

Socio-demographic variables	n(%)
Female	81(41.3)
Marital status	
Married	147(75.0)
Widow	49(25.0)
Religion	
Hindu	185(94.4)
Buddhist	9(4.6)
Christian	2(1.0)
Ethnicity	
Brahmin	117(59.7)
Chhetri	49(25.0)
Janajati	14(7.1)
Dalit	3(1.5)
Others	13(6.6)
Educational status	
Illiterate	71(36.2)
Less than primary level	30(15.3)
Completed secondary level	30(15.3)
More than secondary level	27(13.8)
Less than secondary level	22(11.2)
Completed primary level	16(8.2)
Living placement	
With spouse and children	83(42.3)
With spouse	56(28.6)
With children	49(25.0)
Alone	8(4.1)
Major source of family income	
Private office	58(29.6)
Business	50(25.5)
Agriculture	31(15.8)
Pension	9(4.6)
Others	48(24.5)
Foreign Employment	17(8.7)
Home rent	14(7.1)
Civil servant	13(6.6)
Daily wages	4(2.0)
Monthly family income (NPR)	
More than 20000	98(50.0)
Between 10000-20000	53(27.0)
Less than 10000	45(23.0)

Table 3 shows that out of total respondents, the majority (94.9%) were found to consider regular exercise important whereas 39.9% believed that regular exercise was important to maintain or lose weight. Nearly half (44.9%) practiced regular exercise whereas 61.7% received nutritional information. Family (26.3%) was found to be the major source of information regarding nutrition.

Table 3. Knowledge and practice influencing factors (n=196)

Importance of regular exercise	n(%)
Yes	184(93.9)
No	12(6.1)
Advantage of regular exercise*	
Maintain or lose weight	180(39.7)
Prevent risk factor of disease	161(35.5)
Improves mental health	51(11.3)
Social engagement	50(11.0)
Don't know	11(2.4)
Practicing regular exercise	
No	108(55.1)
Yes	88(44.9)
Information on nutrition	
Received	121(61.7)
Not received	75(38.2)
Sources of nutritional information*	
Family	104(26.3)
Health workers	66(16.7)
Internet	58(14.6)
Book	38(9.6)
Newspaper	19(4.8)
Friends	18(4.5)
T.V.	12(3.0)
Relatives	6(1.5)

*multiple response

DISCUSSION

Studies reported that nutritional status and health of the elderly are generally affected by lifestyle, especially diet, physical activity, and stress.[6] Moreover, the practice of a balanced diet is rarely seen among the elderly population.[1] Therefore, we aimed to assess the status and level of knowledge, and practice of balanced diet intake among the elderly population in Biratnagar.

Although all the respondents had heard about a balanced diet, we found out that nearly half of the respondents had poor knowledge of a balanced diet which is similar to the study conducted in Oman and Malaysia. However, the proportion of respondents with poor knowledge was high in Malaysia in comparison to Oman and the present study.[2,4]

In contrast to our findings, a study conducted in Malaysia reported that a major proportion of respondents had not attended formal education and were female.[4] Similarly, a study conducted in Indonesia reported 41.2% of participants having less knowledge regarding a balanced diet which is slightly less than the findings of our study. But regarding the practice of a balanced diet, only 34.2% were found to practice a proper balanced diet which is comparatively less than our study.[6]

In the context of regular exercise, our study reported a major proportion of participants felt the need to exercise regularly. However, contrary to our findings, an Indian study found that less than half of the participants believed regular exercise was important.[7]

CONCLUSIONS

All the respondents had heard about the balanced diet, among them the majority of the respondents had a poor level of knowledge on a balanced diet. More than half of the respondents had improper practice regarding balanced diet. Hence, the distribution of IEC materials about a healthy diet, advantages of a healthy diet, food pyramids, and food plates for the elderly through the mobilization of FCHVs can promote the nutritional wellbeing of the elderly population.

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CONFLICT OF INTEREST

None

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