

FOOD GROUP INTAKE IN OLDER ADULTS COVERED BY HEALTH CENTERS IN ISFAHAN – IRAN 2016

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ABSTRACT

Background: Nutrition in elderly is very important and has a significant impact on health and quality of life. However, in developing countries, including our country pay little attention to this matter and there is a limited information regarding the nutritional status of elderly people. Therefore, the present study aimed to determine the intake of different food groups in the elderly covered by health centers in Isfahan.

Methods: This is a cross-sectional study on 242 elderly people (125 women and 117 men) aged above 60 years covered by health centers in Isfahan, was conducted in 2016. Food intake collected using food frequency questionnaires and assessment of data was done using descriptive statistics.

Results: This study shows that in compare bread and cereals group intake (9.46 unit) and Meat and beans group intake (2.79 unit) were Equal and milk and milk products group (2.08 unit) and vegetables group (2.88 unit) and fruit group (0.34 unit) were less than recommended amounts.

Conclusions: It seems that due to the mismatch between Esfahan elderly food intakes and recommended amounts .The incoming Less than the standard amount of milk and milk products, fruits and vegetables food groups Through careful planning to get nutritional food groups we require planning to establish a balanced and adequate diet for elderly people.

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Introduction

The number of elderly people is increasing in all countries. Insofar as the population of people aged 60 and more in the world in 2050 is estimated to be more than 2 billion, and between 2015 and 2050 the population over 60 will double in the world, from 12% to 22%. In addition, in 2020 the population of people over 60 years old is expected to be more than children over 5 years old. By the year 2050, more than 80 percent of the elderly will live in developing or underdeveloped countries, and the number of elderly people will increase from 900 million in 2015 to 2 billion [1]. Statistics shows that the population of elderly people in Iran has risen by about 1 percent to 8.2 percent in 2011 [2] and based on demographic estimates, the population of the elderly will reach 14.7 percent of the country's population at the end of the 20-year perspective [3]. Preventing or delaying the disability is of particular importance to aging population in societies [4]. While disability can be prevented and reduced by strategies (5). The health of the elderly depends on how far we can prevent functional constraints, chronic diseases, and malnutrition [6]. Elderhood is a critical period of human life, and attention to the issues and needs of this stage is a social necessity [7]. Studies have shown that nutrition has a significant impact on the incidence of diseases in the elderly people insofar as four major causes of mortality, namely cardiovascular disease, chronic respiratory diseases, cancer and diabetes, are

largely affected by nutritional factors [1] And the unfavorable nutritional status of the elderly, provides a platform for the development of many diseases, including osteoarthritis and hypertension, causing enormous costs to governments and causing many problems in the economic, health and social fields, and the response to it requires a specified program [8].

Adequate nutrition that provides the energy needs of the elderly and the amounts needed for macronutrients and micronutrients can improve nutritional status, increase disease resistance, enhance life expectancy and improve quality of life in the elderly. A complete diet should include all micronutrients and nutrients, liquids and energy, but do not go beyond the needs of the elderly. The level of energy or inadequate nutrition can reduce the cognitive function of the elderly [9]. Therefore, planning is important in this regard, and it is necessary to assess the level of receipt of food groups. In a study conducted on elderly residents of nursing homes using the MNA Mini (Nutritional Assessment), it was concluded that 19.6% of the elderly were malnourished, 53.3% were at risk of malnutrition [10], as well as in another study on retired elderly who used the MNA questionnaire, concluded that 12.9% had malnutrition and 4% had malnutrition [11].

Considering the fact that among the existing studies, there is no study that would have evaluated the dietary intake of food groups in the elderly using FFQ in Iran, and the existing literature is limited to examining the presence or absence of malnutrition in the elderly, the present study was designed to compare dietary intakes with recommended dietary levels in elderly people covered by health centers in Isfahan in 2016.

Methodology

This cross-sectional study was conducted on elderly people under the supervision of Isfahan health centers in 2016. The sample size was estimated 242 persons with 95% confidence interval and 5% accuracy. Criteria for inclusion in the study included being over 60, no cognitive impairment, and willingness to participate in the study.

Sampling was conducted with consecutive research visits from Isfahan health centers and by systematic random sampling of the individuals. Accordingly, based on the number of records of the elderly of each center and the random selection of the first case from existing records in terms of the number of elderly people in the center, e.g. ten to ten files have been selected. The criteria for entry were checked by phoning them. The elderly who had the criteria for entering the research attended the place. If the elderly did not want to be involved the next file was replaced. The participants completed the satisfaction form before filling the questionnaire. The first part of the questionnaire, which evaluated the underlying characteristics of the units studied included: age, gender, employment status, marital status, education, coverage in the comprehensive aging program, the consumption of calcium, vitamin D intake, multivitamin intake, diabetes, hypertension, osteoporosis and heart disease. This part was completed by inquiring the elderly. Subsequently, comprehensive and complete explanations are provided as to food frequency, FFQ. The questionnaire has 168 questions and includes the food that exist in the six main food groups and the amount of consumption of each food, calculated in grams per meal, and the total amount received in each food group was converted into units according to the standard units in the food pyramid. And compared to the standard unit contained in the pyramid. Validity and reliability of this questionnaire have been reviewed and confirmed by Hosseini Esfahani et al. [12].

The questionnaire was completed in two months after a full explanation for the elderly by the researcher using the food album in the health centers of Isfahan. Sampling continued to reach the desired sample size. In this study, the nutritional pyramid of the elderly according to the proposed units in the food pyramid for each food group was used to compare the data with standard values (units of each diet group that should be consumed within one day, as presented in [Table 2] has been used [13].

After gathering, data were analyzed using SPSS16 software developed by the Etminan-e Shargh Statistical Company using centralized and distributed indexes and one-way t-tests. A significant level of 0.05 is considered. The units were first compared with at least the highest standard.

Moral Considerations

This research was approved by the Research Committee of Isfahan University of Medical Sciences (395083). Participants have studied and signed the informed consent form, and they were assured that their participation in the research was voluntary and that, in addition, their information will be confidential.

Findings

In this study, 242 elderly people with a mean age of 67.7 ± 7.4 years participated. Their underlying and clinical findings indicated that the number of women, married people, employed persons and those under the diploma, calcium supplementation use, hypertension, lack of coverage in the comprehensive aging program, and care provided by the children or spouse or both have the highest rate among participants. The number of men, unemployed people, single people, college education, multi-vitamin use, osteoporosis according to the elderly's expression of the disease, coverage in the comprehensive aging program, and care by others, the lowest percentage among consist the lowest rate of participants in the study the details of which are given in (Table 1).

Table 1: Demographic and clinical characteristics of study participants

	number (percentage)	
Gender	Female	125 (51.7%)
	Man	117 (48.3%)
Job	Out of employment	123 (50.8%)

	occupying	193 (49.1%)
marital status	Single	13 (5.4%)
	Married	207 (85.5%)
	Widow	22 (9.1%)
education	illiterate	77 (31.8%)
	Low literate	109 (45.0%)
	Diploma	44 (18.2%)
	College education	12 (5.0%)
Nutrition Supplementation	Calcium	37 (15.3%)
	Vitamin D	36 (14.9%)
	multi vitamin	2 (0.8%)
	B vitamins	3 (1.2%)
	None	164 (67.8%)
Disease	Diabetes	32 (13.2%)
	High blood pressure	39 (16.1%)
	Heart disease	11 (4.5%)
	Osteoporosis	9 (3.7%)
	None	164 (67.8%)
Under the program of integration of aging	Yes	32 (13.2%)
	no	39 (16.1%)
Watchful	Spouse	11 (4.5%)
	Son	9 (3.7%)
	Spouse or child or both	164 (67.8%)

Moreover, the results of this study showed that consumption of bread and cereals group (value = 0.001 P compared to minimum and maximum) in the present study was according to standards and consumption of meat and bean group (P value = 0.001 in comparison with minimum and P value = 0.201 compared with maximum) Was equal to the standard level and the consumption of vegetable group (P value = 0.191 in comparison with minimum and P value = 0.001 in comparison with maximum), fruits (P value = 0.001 in comparison with minimum and maximum) and milk and dairy (0.339 = P value in comparison with minimum and P value = 0.001 in comparison with maximum) was lower than standard (Table 2).

Table 2: food groups intake and compared the dietary intakes with standard values

		Food group Intake (unit)		Statistical results			
the food groups Name	The minimum and maximum standard unitsof intakes	The minimum and maximum consumer unit per day	Intake mean ± SD	P value compared to minimum	P value compared to maximum	T compared to minimum	T compared to maximum

Bread and cereals (30gr)	(6-11)	0.7-31.3	4.9± 9/46	0.001	0.001	10.8	4.82
Meat (30gr) and beans(0/25 cup dry)	(2-3)	0.1- 8.4	2.4 ± 2.7	0.001	0.201	5.07	1.28
Milk and dairy (240cc)	(2-3)	0.1- 5.3	1.4 ± 2.0	0.339	0.001	0.95	9.85
Fruit (60gr)	(2-4)	0 -2.4	0.3 ± 0.3	0.001	0.001	167.89	76.08
Vegetables (0/5 cup raw)	(3-5)	0.3-10.2	2.88 ±1.3	0.191	0.001	1.31	24.78
Fats(5 gr)	-	0 -10.8	3.0 ± 5.4	-	-	-	-
Sweets(5 gr)	-	0 -15.4	9.5 ± 7.0	-	-	-	-

Discussion and Conclusion:

Efforts to provide adequate nutrition for aging problems are very important. Elderhood process affects the nutritional needs of the individual, so that the need for some foods may be reduced. Some studies have shown that the need for essential nutrients in the elderly increases, so it is necessary to determine the correct nutrition of this group. Nutrition is affected by several factors, including nutritional value, personal preferences and beliefs, culture and practice, environment, social factors, and economics that are effective in shaping a person's diet [1]

In this study, the nutritional groups received in the elderly are indicated, and the results are compared with the standards for this demographic group. The consumption of bread and cereals in the elderly is equal to the standard rate. The average of the received units in this study was 46.9. In the study of Agha Noori et al., using a 24-hour questionnaire, the consumption of bread and cereals group was also reported as standard [14]. In our study, we found that the meat and grains group was equal to the standard rate. The average unit intake from this group was 2.7. IRashidi et al. reported in their study that the consumption of red meat in the elderly was 82% [15].

Our study found that the milk and dairy group was less than standard. The average unit received from this group was 2.08. According to Aghanori et al., only 37% of the elderly had enough dairy products [14]. A study by Yahya Pasdar et al., has shown that the average intake of dairy products is 1.5 units, which is lower than the recommended amount for the elderly [16]. In this study, the consumption of fruit group is lower than the standard level. Salehi et al in their study on the use of the fruit group have shown that 63.7% of the elderly use fruit less than standard. Consumption of vegetable group in this study is less

than standard. The average unit received from this group was 2.8. In Salehi et al., 97.7% of the elderly did not receive enough vegetables [17].

In this study, the minimum unit of consumption of fats and sweets is approximately 3 and 7 units, while the elderly should consume much less. In the study conducted by Bahrami et al., 22.9% of the elderly consumed more than 5 units of sweets per day, and 24% of the elderly chose the pattern of fried foods and 52.8% of them did not separate the visible fats of red meat [18]. A 24-hour questionnaire on elderly over 55 years has shown that calorie intake has increased with age and consumption of saturated fats is still more than needed. [19]. Finally, Nejati also reported malnutrition in 6.6% of the elderly [20].

In other previous studies, other questionnaires have been used that had more limited questions about the frequency of food frequency, such as the MNA, included: anthropometric measurements and food groups in general. But in the current study questionnaire, the individual food was studied from each group. In previous studies, the studied samples were either elderly from care centers who did not themselves interfere with the choice of food they received and had their own limitations, or were retired people from state-owned centers with a certain income and could not be a good example of the elderly of the whole community. But in this study, all elderly people were examined, and in view of the fact that texts on the elderly also emphasize the essential role of the nurse in the nutrition of the elderly, and the training and care provided by the nurse and as mentioned above and according to studies done in different countries as well as in Iran and the many problems associated with nutrition in the elderly, and finally the results of the present study, the need to pay more attention to the nutrition of the elderly, especially in the group Dairy products and fruits and vegetables are in need of further study on the nutrition of the elderly. The limitations of this study include reminder errors regarding the effect of age-related changes on the short-term and long-term memory of the elderly in relation to the measured variables and the inability of the elderly to be alone and incapable of attending the health center from the limits of data collection and Management of this limitation has been beyond the control of the researcher.

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