Nutrıtıon of the Elderly Living in Oğuzelı District and Effect Of Health Educatıon

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Abstract:

Background: *An adequate, nutritious balanced diet is very important for a healthy life and this is particularly important in old age.*

Objectives: *To determine general nutrition habits of elderly in Oğuzeli, Gaziantep and, to increase these elderly people's level of knowledge on nutrition through health education and then to determine whether this education had any effect on their current habits.*

Materials and Methods: *The first phase of the study was cross-sectional and the second was interventional. In the second phase, nutrition education was appied to elderly by a dietician, a Public Health specialist and two research assistants. Four months after the health education, the nutrition habits questions were asked again.*

Results: *Men were more likely to consume fatty and sugary food, cola and tea than women (P = 0.021, P = 0.011, P = 0.007). There was no statistical significance between hypertensive individuals and normotensives in salt consumption and sugary and fatty food consumption levels, and in those with diabetes, the consumption of fatty and sugary food was significantly lower than non-diabetics (p = 0.001), while there was no difference in the frequency of fruit and cola consumption. After health education, there were no significant changes in the consumption frequency of fatty and sugary food, salt, tea, cola, coffee, red meat and products, fruits, vegetables or dairy products.*

Conclusions: *All of these can be regarded as an indicator of difficulty of changing cultural norms and acquired habits in elderly. Healty nutrition habits should be gained begining from childhood.*

Keywords: *Cronic diseases; Geriatric, Aged; Health education,; Nutrition,; Obesity.*

1. INTRODUCTION

In almost every country, the proportion of the elderly in the population is growing as a result of both longer life expectancy and declining fertility rates. The total elderly population in Turkey was 7.2% in 2010, which was twice as high as 70 years before.[1] This proportion had risen to 7.9% in the 2013 Turkish Demographic and Health Survey (TDHS 2013).[2]

This population ageing can be seen as a success story for public health policies and for socioeconomic development, but it also challenges society to adapt.[3] While the risks of disease and disability appear to be significantly increased in the elderly, poor health is not necessarily an inevitable consequence of aging, and most of the disability and death due to chronic disease can be reduced using preventative measures.[1]

An adequate, nutritious balanced diet is very important for a healthy life and this is particularly important in old age. Chronic disease is expected to have a 57% growth by 2020, with almost half of these diseases— such as cardiovascular diseases, obesity, diabetes mellitus, cancer, allergic diseases, and osteoporosis —being closely related to nutrition. Nutritional problems are not only a health issue in themselves but also the most important underlying cause of chronic disease.[4] Anthropometric measurements, diet history, and biochemical and bio-physiological tests are used for the assessment of nutritional status.[5]

How well we age depends on many factors. The functional capacity of an individual's biological system increases during the first years of life, reaches its peak in early adulthood and naturally declines thereafter. The rate of decline is determined, at least in part, by our lifestyle and environment throughout life. Factors include what we eat, how physically active we are and our exposure to health risks such as those caused by smoking, harmful consumption of alcohol, or exposure to toxic substances.[6]

The objective of this study in the first phase was to determine the health status of people 65 years and older living in Oğuzeli, Gaziantep, Turkey by examining the prevalence of chronic diseases, smoking and alcohol use, and their daily living activities, as well as examining general nutrition habits and the factors affecting these. In the second phase, we aimed to increase these elderly people's level of knowledge on nutrition through health education and then to determine whether this education had any effect on their current habits.

2. MATERIALS AND METHODS

The first phase of the study was cross-sectional and the second was interventional. The cross-sectional phase was conducted from January to March 2013.

The total elderly population registered to family doctors in Oğuzeli was 632 and the sample size representing elderly in Oğuzeli region was determined as 305 (N = 632, d = 0.035, p = 0.25, α = 0.05). The sample was selected using a simple random sampling technique. 291 replies were eventually received, a response rate of 95.4%.

In the first phase of the study, the questionnaire was conducted face to face by intern doctors and researchers. The height and weight of the participants were recorded using an automatic tape and a mechanical weighing machine. Blood pressure was taken using a manual monitoring machine. Blood pressure level over 140/90 mmHg considered to be evidence of hypertension (HT). The questionnaire, prepared from an intensive literature review, had 51 items.

In this study, body mass index (BMI) and a food frequency questionnaire were used for the assessment of nutritional problems in the elderly. The questions about participants' nutrition habits, which included questions about food consumption and frequency, were scored using a 5-point Likert scale. This section investigates the dietary habits with questions used by other researchers and the questions added by us.[7] The food groups included the main food groups (fruits, vegetables, cereals, milk and dairy products, meat) as well as specifying potentially harmful foods, such as fatty and sugary foods, adding extra salt, coffee, tea, cola, and ready food (11 food groups). The frequency of consumption was evaluated across the 5 categories of never, rarely, sometimes, frequently and always. In the statistical analysis, the consumption frequency was evaluated across 3 categories; group one (never), group two (rarely and sometimes) and, group three (frequently and always).

In the second phase, participants were invited to nutrition education. The participants were offered transport from their homes by a municipality vehicle to encourage their participation. The health education took place on June 5th, 2013 at the Oğuzeli Municipality conference hall. The nutrition education consisted of a lecture by a dietician and discussions with a Public Health specialist and two research assistants. The general nutrition lecture was conducted using slides, after which the education continued through a question and answer session focused on chronic disease and nutrition. Four months after the education, the nutrition habits questions were asked again to 25 of the people who had participated in the health education seminar and their weight and blood pressure were again taken.

All participants orally gave informed consent for the study, the study protocol was approved by the Gaziantep University Clinical Research Ethics Committee (date: 08-01-2013).

The data was evaluated on a computer using SPSS 17.0. In the statistical analyses, chi-square, the student t-test, a paired samples t-test and the McNemar analysis were conducted.

3. RESULTS

Of the elderly, 61.2% were female, 71.1% were illiterate and 88.3% had social security. 10.7% were still working, and of these, the majority working in agriculture (82.8%). The mean age of the participants was 73.94 ± 0.37 (min = 65, max = 102). 58.6% were in the young elderly group (65–74), 35.8% in the elderly group (75–84) and 5.6% were in the highly elderly group (85 and over).

The prevalence of current smokers was 7.6%. Among all participants, only two consumed alcohol (0.7%), both of which were men.

93.8% of elderly reported that they could do all daily activities alone. Only 6.2% were regularly exercising. The young elderly were more likely to exercise (p = 0.038). Of the elderly, 61.5% felt themselves to be healthy. Males (P = 0.000), the young elderly and people who had social security (P = 0.02), those who had an income over 1000 Turkish Lira a month (P = 0.028), those to whom young people went to for advice (P = 0.002) and those who enjoyed engaging in social life (P = 0.013) were more likely to consider themselves healthy.

28.2% stated that they had no chronic disease. The most frequent diseases reported were HT (44%), diabetes (DM) (22.3%), cardiovascular diseases (17.9%), musculoskeletal diseases (13.7%), respiratory diseases (12.7%), mental health problems (4.1%) and cancer (1.03%). Men were more likely to say "I do not have any chronic disease" (p = 0.001). In addition to those who stated that they had no HT (n = 163), a further 103 people were found to have high blood pressure, with an overall HT prevalence of 79.7%.

2.1% were identified as underweight, 25.2% were normal weight, 35.5% were overweight, 32.8% were obese, and 4.5% were morbidly obese. Significantly, obesity was found to decrease with increasing age (p =0.001).

A small percentage of women had an early diagnosis processes of cervical cancer (3.93%) and breast cancer (8.98%). Only one man stated that he was doing breast self-examination. The blood examination for prostate cancer in men was comparatively higher (25.7%). None of the elderly had had an early diagnosis processes of bowel cancer. 5.2% stated that they were regularly vaccinated, all of these having had the influenza vaccine.

Nutrition Habits

The distribution of participants according to the food consumption frequency is shown in Table 1. Men were more likely to consume fatty and sugary food, cola and tea (frequently and always) than women (P = 0.021, P = 0.011, P = 0.007). The differences by sex in the consumption of other food groups were not determined (P > 0.05). Food consumption frequency was not statistically significant by educational level, age and marital status (P > 0.05). There was no statistical significance between systolic and diastolic hypertensive individuals and normotensives in salt consumption and sugary and fatty food consumption levels (P = 0.366, P = 0.323) (P= 0.368, P= 0.855). In those with diabetes, the consumption of fatty and sugary food (frequently and always) was significantly lower than non-diabetics (P= 0.001), while there was no difference in the frequency of fruit and cola consumption (P = 0.626, P = 0.255).

Table 1. *Distribution of participants according to the frequency of food consumption*

Food Groups	Consumption Frequency	N	%
Fatty and sugary food	Never	27	9.3
	Rarely	99	34.0
	Sometimes	97	33.3
	Frequently	44	15.1
	Always	24	8.2
Adding extra salt to food	Never	71	24.4
	Rarely	62	21.3
	Sometimes	59	20.3
	Frequently	49	16.8
	Always	50	17.2
Cereals	Never	3	1.0
	Rarely	16	5.5
	Sometimes	40	13.7
	Frequently	116	39.9

	Always	116	39.9
Tea	Never	16	5.5
	Rarely	27	9.3
	Sometimes	55	18.9
	Frequently	45	15.5
	Always	148	50.9
Cola	Never	164	56.4
	Rarely	82	28.2
	Sometimes	26	8.9
	Frequently	13	4.5
	Always	6	2.1
Red meat and products	Never	3	1.0
	Rarely	26	8.9
	Sometimes	123	42.3
	Frequently	107	36.8
	Always	32	11.0
Ready food	Never	193	66.3
	Rarely	48	16.5
	Sometimes	41	14.1
	Frequently	8	2.7
	Always	1	0.3
Fruits	Never	2	0.7
	Rarely	17	5.8
	Sometimes	72	24.7
	Frequently	109	37.5
	Always	91	31.3
Vegetables	Never	1	0.3
	Rarely	22	7.6
	Sometimes	66	22.7
	Frequently	141	48.5
	Always	61	21.0
Coffee	Never	145	49.8
	Rarely	97	33.3
	Sometimes	36	12.4
	Frequently	9	3.1
	Always	4	1.4
Milk and dairy products	Never	2	0.7
	Rarely	15	5.2
	Sometimes	32	11.0
	Frequently	100	34.4
	Always	142	48.8

Results of health education

The results of the pre and post-education food consumption level of the 25 people who participated in the nutrition education showed that:

1-There were no significant changes in the consumption frequency of fatty and sugary food (P=0.454), salt (P=0.059), tea (P=0.543), cola (P=1.00), coffee (P=0.07), red meat and products (P=0.289), fruits (P=1.00), vegetables (P=1.00) and, dairy products (P=1.00).

2-The consumption of cereals (rarely and sometimes) rose 32% from 8% (p = 0.027). Never consuming ready food decreased to 36% from 60% (P= 0.007) (Table 2).

3-There were no changes in the BMI after the education (P= 0.737).

Table 2. *Significant changes in food consumption frequency before and after health education (n=25)*

		After				P
Cereals	**Before**	Never	Rarely and sometimes	Frequently and always	Total	
	Never	0	1	0	1 (4%)	
	Rarely and sometimes	0	2	0	2 (8%)	0.027
	Frequently	0	5	17	22 (88%)	

	and always					
	Total	0	8 (32%)	17 (68%)	25 (100%)	
Ready food	Never	9	6	0	15 (60%)	
	Rarely and sometimes	0	9	1	10 (40%)	0.007
	Frequently and always	0	0	0	0	
	Total	9 (36%)	15 (60%)	1 (4%)	25(100%)	

4. DISCUSSION

In almost every country, the percentage of people in the population aged over 60 years is growing faster than any other age group. Therefore, each country, developing countries in particular, needs to recognize the challenges to be faced in the future and design solutions.

Avoiding smoking and alcohol is very important for cancer prevention. In a study, the smoking prevelance was reported to be 10.3% among elderly in Turkey.[8] Although the current smokers in our study (7.6%) were lower than in the whole country, 19.2% had smoked before. All current smokers and two people concuming alcohol were men in the study and, so elderly men should particularly be the target group for health education.

The percentage of elderly who exercised regularly was very low in our study, especially compared with a previous study where up to 50% reported that they did regular exercise.[9] We think there were two reasons; firstly, because most of the participants were involved in daily rural activities, they felt they did not need to do other regular exercise, and secondly, regular exercise was not a cultural habit. Overall, a higher rate of participation in all daily activities is a positive sign, and may suggest that the elderly living in rural areas are active, which may also explain the lack of exercise habits.

The prevalence of HT was 79.7% in our study but 44.8% were not aware of their situation. In many studies, hypertension has been found to be the most prevalent disease in Turkey and worldwide and, awereness and control are poor.[9,10,11,12] Public health efforts to further improve awareness and detection and to enhance effective control are needed. Eating habits involving the overconsumption of fat and salt should be discouraged, while lifestyle changes such as increased physical activity need to be encouraged.

In most studies, diabetes has been found to be the second most prevalent chronic disease.[9,10] In a study using modeling conducted in Turkey, it was found that DM prevalence was 7.5 % in 1997, 16.2% in 2010, and was forecasted to be 31.5% in 2025.[13] The high prevalence in Turkey indicates that inactivity, obesity, and unsuitable nutrition are the main public health issues. In our study, the elderly with diabetes reported consuming less fatty or sugary food, which indicates that the presence of a chronic disease may result in positive behavioral change over the long term. However, diabetics should be warned specifically about the glycemic index in fruit and cola by primary health workers because they often consume them as if they were normoglycemics.

Poor nutrition is often associated with increased morbidity and mortality. In a study that examined 12 countries, the prevalence of malnutrition was found to be 22.8%.[14] In Swedish nursing homes, 17.7% were found to be malnourished.[15] In Pakistan 40.9%, in Central Africa 19.2% of elderly were found to be underweight.[16,17] Therefore, approximately one fifth of the elderly appear to suffer from malnourishment worldwide. The low underweight prevalence in our study was a positive finding, which may be due to the socio-economic, cultural, and nutritional habits of the district. This might also be a predictor of the quality and amount of family support given to the elderly.

Obesity prevelance was 37.3% in our study, 24.8% in Sivas, 41.1% in Kayseri among elderly.[10,18] Total obese elderly were found to be 48.9% in Tunisia, 5.9 % in Pakistan.[12,16] The high obesity and overweight prevalence observed in Kayseri, and Gaziantep and Tunisia, all of which have famous cuisines, indicates that the most important factor affecting obesity is the food culture. Food culture needs to be adjusted as individual lifestyles change, such as by decreases in activity as people grow older. Of the participants, 77.3% stated that they had never had a weight problem, which means that these 77.3% considered themselves to be normal in weight, a figure that was in fact only 25.2%. If a situation is not considered a problem, people do not try to solve it.

Today, cancer is among the leading causes of death worldwide. A very small percentage of the elderly in the study did something for early diagnosis. However, physicians may have given tests but did not share the results because there was no problem identified or the elderly may have forgotten to ask for these. Community awareness regarding early diagnosis was found to be low in the study population: firstly, an important finding in the study was that a majority of men felt that they did not need to do breast self-examination because they believed that men did not get breast cancer. Secondly, no participant had screened for bowel cancer. Few of the elderly reported having had any vaccines, one of the most important preventive measures. Primary health care professionals should be trained in early diagnosis and adult vaccination, and vaccine payments should be covered by social security to increase vaccine coverage.

Nutrition

Approximately half of the participants were found to have a higher risk of inappropriate diet because of fatty and sugary food and, considering the diseases they did have, many more than half might be at risk. Diabetics consume less fatty and sugary food, so we feel that this indicated that the elderly did not have adequate knowledge about the importance of nutrition, not only for those with chronic disease but also for those who wish to lead longer, healthier lives. General nutritional education, especially about fatty and sugary foods, should start in childhood in the family.

Reducing the intake of salt has been identified as one of the most cost-effective measures a country can take to improve population health outcomes. Nearly three-fourths of the elderly in the study added extra salt to their food. The fact that there was no difference after the health education emphasizes the importance of primordial prevention. Although the effects of high salt intake are one of the most known health issues in communities, salt consumption levels were not low even in the hypertensive elderly. This indicates that acquired habits cannot be changed even in the presence of disease. There should be posters emphasizing the problems of excessive salt intake clearly visible in family health centers.

No major problems in coffee, cola, and ready food consumption frequency were found in the study. However, tea consumption was found to be very high. Because cola and tea consumption was also high in men, nutrition education would be useful in places where men regularly meet, such as cafes and military barracks. In our study, the consumption frequencies of food groups were not significantly affected by educational level, age, marital status. This may have been because the study group shared the same culture in a small region that had a homogenous structure.

Because of decreased immunity and the increasing incidence of chronic diseases, there is a need to increase the consumption of vitamins and minerals in the elderly. Fruit (93.5%) and vegetable (92.2%) consumption was found to be very high in the study. In Isparta and Burdur, few elderly were found to eat vegetables (40.1%).[19] The high regional fruit and vegetable consumption was assessed as a positive finding. However, because of the high prevalence of obesity and diabetes, the elderly should be warned about the number and size of food portions.

82.2% consumed milk and products frequently, which was a positive finding for osteoporosis struggle. Because of the decreased immune system function in the elderly, an adequate intake of protein is important, but red meat protein intake should be restricted because of the saturated oil acids. The consumption of red meat and products in the study group was found to be very high (90.1%). In Isparta and Burdur the most preferred food was also meat (88.1%).[19] Even though red meat is a favorite food in Turkey, the elderly should be encouraged to eat more fish and chicken, and also trained about portion size.

Effect of Education

Despite all the efforts made (such as calling the elderly on mobile phones to participate in the health education, announcements by the common council speaker, and taking the elderly by bus from their homes), only 15 women and 15 men participated in health education, and 5 of these were not in the initial study group, participation in the health education was only 8.5%. Moreover, the lack of change in consumption frequency after the education suggested that the elderly population in Gaziantep may not be a suitable group for nutrition education. However, this may have been a result of

1- the low educational level in the study group

2- the already high consumption of some food groups, such as fruits and vegetables, before the education.

The elderly frequently used the following sentences in the study:

"We are from Gaziantep; we cannot eat meals without meat";

"I am not interested in nutrition education; I'll recite the Qur'an and pray";

"I do not need nutrition education; I am already old."

All of these can be regarded as an indicator of difficulty of changing cultural norms and acquired habits. Therefore, education of families especially, mother, is very important, especially in terms of giving children right habits. Both mothers and fathers should be encouraged to be role models. In family education, emphasis on the difficulty of changing acquired habits and the importance of adequate and balanced nutrition is required. It is also very important to create healthy menus at schools; the salt in the menu should be restricted and salt shakers removed.

In particular, for the elderly, physicians need to explain balanced nutrition at every visit and then eating habits should be supervised by family members. Training relatives of the elderly may be effective in the short term. In a randomized controlled trial conducted on adults aged 20–60, one group used an electronic system to record their eating, another group used a food diary, and the control group used nothing to record food intake. Significant improvements in the domain of 'dietary recommendations', 'sources of nutrients', 'choosing everyday foods' and 'diet-disease relationships' were found in the electronic system and food diary groups.[20] Therefore, it may be useful to closely monitor the elderly that are living alone, those with a lower educational level, and those with chronic diseases, especially when the elderly themselves do not appear to have much interest in general nutrition education.

5. CONCLUSİONS

Important problems in consuming frequencies, including fatty and sugary food, salt and meat was determined in the elderly in the study. Difficulties in partipiciating health education and results of education can be regarded as an indicator of difficulty of changing cultural norms and acquired habits in elderly. Healty nutrition habits should be gained begining from childhood.

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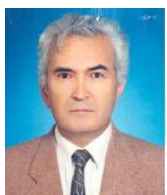
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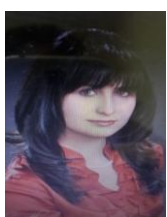
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