



THE HEALTH AND SOCIAL STATUS OF THE ELDERLY: A MULTIVARIATE ANALYSIS

Yaşlıların sağlık ve sosyal durumları: Çok değişkenli bir analiz

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Abstract

The rationale of the study is to determine the relationship between the health and social status of the elderly and the related factors. This study is cross-sectional. The data of the study were obtained from the n=1025 nursing care plan form of elderly who applied to the primary health care institutions in the city center of Yozgat in 2016-2017. The data were analyzed by Chi-Square test, binary, and multinomial logistic regression. Of the elderly who participated in the study, 47.8% were women, 72.3% were married, and 41.7% were in the 65-69 age group. 33.6% of the elderly are obese, 82.2% have a diagnosed health problem, the most common (53.5%) is hypertension, 80.3% use drugs, 40.4% use at least three drugs. They were stated that 39.3% of them fell after the age of 65. In the last 30 days, the elderly mostly experienced anxiety (22.9%), and anger was second (17.6%). It has been observed that the elderly mostly (74.5%) tend to worship in case of stress and distress, mostly (40.1%) go to neighbors in their spare time and 79.8% of them have good neighborly relations. The elderly who are women, not exercised, non-pursuit, and have high body mass index (BMI) are at higher risk of having at least two health problems. It has been determined that a great majority of the elderly have health problems, 2/5 of them took at least three drugs and fell after the age of 65. As a result, women, those who live sedentarily, and those with high BMI are at high risk for health.

Keywords: Elderly, health status, social life, multivariate analysis

Özet

Dünyadaki yaşlı nüfus, toplam nüfusun önemli bir bölümünü oluşturmaktadır ve gelecekte bu oran artacaktır. Bu çalışmanın amacı, yaşlıların sağlık ve sosyal durumlarını ve etkileyebilecek faktörleri belirlenmektir. Bu çalışma, kesitsel türde bir kayıt araştırmasıdır. Araştırmanın verileri, Halk Sağlığı Hemşireliği dersi uygulaması kapsamında 2016-2017 eğitim-öğretim yılında Yozgat il merkezinde bulunan birinci basamak sağlık kuruluşlarına başvuran 65 yaş ve üstü bireylere ait n=1025 bakım planı formundan elde edilmiştir. Veriler, ki-kare testi, binary ve multinomial lojistik regresyon ile analiz edilmiştir. Araştırmaya alınan yaşlıların %47,8'i kadın, %72,3'ü evli, %41,7'si 65-69 yaş grubundadır. Yaşlıların %33,6'sı obez, %82,2'sinin tanımlı bir sağlık sorunu olduğu, en sık görüleni %53,5 ile hipertansiyon olduğu, %80,3'ünün ilaç kullandığı, %40,4'ünün en az üç tane ilaç kullandığı, %39,3'ünün 65 yaşından sonra düştüğü saptanmıştır. Yaşlıların son 30 gün içinde en çok anksiyete (%22,9), ikinci sırada öfke (%17,6) duygusunu yaşadığı, stres ve sıkıntı durumunda yaşlıların en sık ibadete yöneldiği (%74,5), boş zamanlarında daha çok komşulara gittiği (%40,1) ve %79,8'inin komşuluk ilişkilerinin iyi olduğu görülmüştür. Yaşlılardan kadınlar, egzersiz yapmayanlar, uğraşısı olmayanlar ve beden kütle indeksi (BKİ) yüksek olanlar, en az iki sağlık sorunu görülme açısından daha yüksek risk altındadır. Yaşlıların büyük bir çoğunluğunun sağlık sorunu olduğu, 2/5'inin en az üç tane ilaç aldığı ve 65 yaşından sonra düştüğü saptanmıştır. Sonuç olarak, kadınlar, sedanter yaşayanlar ve BKİ'si yüksek olanlar sağlık açısından yüksek risk altındadır.

Anahtar kelimeler: Yaşlı, sağlık durumu, sosyal yaşam, çok değişkenli analiz.

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Introduction

According to TURKSTAT (Turkish Statistical Institute) data, life expectancy at birth is 78.6 years in our country. With the prolongation of the life span, the elderly population constitutes a significant part of the society. Turkey's population over the age of 65 in the last five years increased by 21.9% in 2019 and is reported to be 9.1% of the elderly population. In the province where the research was conducted in 2020, the rate of elderly population is 13.9% and the rate of elderly dependent is 21.2% (1). The World Health Organization (WHO) states that there is a rapid increase in the elderly population in the whole world in a way that has not been seen before and the majority of the elderly live in middle-income countries. WHO focuses on healthy aging for the health of the growing elderly population (2). Old age is a period in which physical and mental health problems are seen together (3).

41.5%, cancers with 15.3% and respiratory diseases with 15.3% at the third place (1). Old age is a period in which various chronic diseases are seen together and these problems accompany psychological problems (4–6). There are many factors that affect health in old age. These are age, gender, presence of chronic disease, depression, perception of health as bad, and dependency (3). In the Healthy Aging Action Plan and Implementation Program of Turkey, it is stated that 90% of the 65 and older group have 1 chronic disease, 35% have 2, 23% have 3, 15% have 4 or more chronic diseases (7). It is reported that the majority of the elderly with chronic diseases cannot adapt to drug treatment (8).

Health and social life in old age are in a mutual interaction. While the health problems experienced affect the social life of

the elderly, problems in social life can affect their mental health (9, 10). It is extremely important for the elderly to participate actively in social life, to share their knowledge and skills, to strengthen interpersonal relationships, to cope with mental problems and to enjoy life (11, 12). Considering the elderly in terms of mental health, depressive symptoms are common and the frequency of depressive symptoms is higher who are loneliness, dependence on another person, be mistreated, perceive their health status more negatively than in the previous year and have economic inadequacy (13). Fear of death, loneliness, anxiety and worry can often be encountered during this period (14, 15).

Chronic diseases, loss of role and status with retirement, decrease in income, loss of spouse, friends or acquaintances affect the social health of the elderly (4, 16-18). The excessive health problems of the elderly affect their physical and psychological health and social life (19). It is not possible to completely eliminate the problems experienced during this period. What needs to be done is to prevent complications that may arise due to health problems and to protect the productivity of the elderly by ensuring that they are active in social life. At this point, preventive services carried out within the scope of primary health care services should be concentrated in this risky group and the elderly with health and social problems should be identified through follow-up.

This research was conducted to more accurately determine the physical and emotional health problems, and social status of the elderly and the factors affecting them.

Material-Method

Study design: This study was conducted in the Family Health Centers (FHCs) and Tuberculosis Dispensary (TD) in the central province of Yozgat, in 2017.

Type of the research: This study is a cross-sectional.

Population: The population of the study

consists of the registration forms of elderly people aged 65 and over who applied to Family Health Centers (FHCs) that were 1, 3 and 5 number and Tuberculosis Dispensary (TD) in February-June 2017. Health conditions of the elderly who applied to the primary healthcare centers are evaluated by intern nurses using application forms within the scope of elderly healthcare practices. The sample of the study consists of the n=1025 registration forms that contain information about the health status and daily social life of the elderly who applied to a health institution.

The minimum sample size for the study was calculated with the G-Power 3.1 program. In calculating the sample size, the prevalence of health problems in the elderly was found to be 84% in a study conducted by Tufan et al. (2018) (20), and for this study, the frequency was taken as 85% and the effect size was 0.10, $\alpha=0.05$ and $1-\beta=0.95$ power, the minimum sample size was calculated as n= 110. In cases where multivariate analysis is performed, it is appropriate to take at least 3-fold (n=330) the minimum sample size in order to have sufficient data (min. 10) in each subgroup.

Inclusion and exclusion criteria: Inclusion criteria for the study: The forms should belong to people aged 65 and over, contain complete information about their physical and emotional health status, and belong to 2017.

Exclusion criteria: The forms belong to persons under 65 years of age, there is incomplete or no information about their physical and emotional health status, and they do not belong to 2017.

Data collection tools: The data contained in the health care forms for the elderly including socio-demographic characteristics, and data on social life were evaluated. Intern nurses who go to FHCs for nursing practice have been trained on how not to work there. All nurses collected data using previously prepared standard forms.

Data analysis: The data was analyzed in IBM Statistical Package for Social Sciences (SPSS) Standard Concurrent User V 25, Authorization Code: e31d836848b0a60e5756. In the analysis of data, Chi-Square, correlations and Binary Logistic Regression (BLR) and Multinomial Logistic Regression (MLR) analysis were used. Common physical (Hypertension, diabetes, COPD-asthma, hearth disease) and emotional health problems (Fear, depression, anger, despair, hopelessness, anxiety), number of health problems and falling after age 65 were taken as dependent variables. The independent variables: Dummy (categorical) variables were gender, marital status, people he/she lives with, smoking, having a house, exercise, taking care of their nutrition and religious activity; continuous variables were age, body mass index (BMI), number of health problems, number of medicines taken; ordinal variables were education level, relationship with neighbors, and income level. Independent variables that were found to be statistically significant at the $p<0.10$ level in the Chi-Square test and correlations were included in the BLR and MLR analysis. Health problems, emotional states and getting help from institutions were analyzed with multivariate BLR and MLR as dependent variables. The regression analysis was performed by the backward elimination method. The variables found important as a result of the analysis are shown in the tables.

Ethics committee: Necessary permissions were obtained from the relevant authorities for nursing students to practice in the primary health centers, and in order to use the data in the forms filled during the practice. Ethics committee approval was obtained from the Ethics Committee of Yozgat Bozok University, the date of approval: November 18, 2020 and approval numbers: 15/11. In order to use the data in the forms filled during the practice.

Results

Table 1: Socio-demographic and health characteristics according to gender.

Characteristics	Female		Male		Total		χ^2 p	
	Count	%	Count	%	Count	%		
Age group								
65-69	213	43.5	214	40.0	427	41.7	2.923 0.404	
70-74	126	25.7	157	29.3	283	27.6		
75-79	82	16.7	80	15.0	162	15.8		
80 +	69	14.1	84	15.7	153	14.9		
Marital status								
Married	268	54.7	473	88.4	741	72.3	145.159 <0.001	
Single	222	45.3	62	11.6	284	27.7		
Living the person								
Alone	111	22.7	38	7.1	149	14.5	101.950 <0.001	
With spouse	234	47.8	415	77.6	649	63.3		
With children and other people	145	29.6	82	15.3	227	22.1		
Education level								
Illiterate	260	53.1	40	7.5	300	29.3	339.755 <0.001	
Literate	84	17.1	59	11.0	143	14.0		
Primary school	135	27.6	283	52.9	418	40.8		
Secondary school	5	1.0	76	14.2	81	7.9		
High school and upper	6	1.2	77	14.4	83	8.1		
Body mass index (BMI) kg/m²								
< 25	90	18.4	167	31.2	257	25.1	51.101 <0.001	
25-24.99	184	37.6	240	44.9	424	41.4		
≥ 30	216	44.1	128	23.9	344	33.6		
Income status								
Bad	55	11.2	36	6.7	91	8.9	7.870 0.020	
Middle	217	44.3	229	42.8	446	43.5		
Good	218	44.5	270	50.5	488	47.6		
Number of having health problems								
Not having	56	11.4	126	23.6	182	17.8	55.842 <0.001	
1 problem	159	32.4	224	41.9	383	37.4		
2 problem	167	34.1	125	23.4	292	28.5		
3 problem and more	108	22.0	60	11.2	168	16.4		
Diagnosed diseases								
Hypertension	No	176	35.9	301	56.3	477	46.5	42.542 <0.001
	Yes	314	64.1	234	43.7	548	53.5	
Heart disease	No	419	85.5	441	82.4	860	83.9	1.797 0.180
	Yes	71	14.5	94	17.6	165	16.1	
Diabetes	No	334	68.2	436	81.5	770	75.1	24.324 <0.001
	Yes	156	31.8	99	18.5	255	24.9	
COPD-Asthma	No	439	89.6	485	90.7	924	90.1	0.325 0.569
	Yes	51	10.4	50	9.3	101	9.9	
Osteoporosis	No	451	92.0	533	99.6	984	96.0	38.322 <0.001
	Yes	39	8.0	2	.4	41	4.0	

Number of taking drugs							
Not using	63	12.9	139	26.0	202	19.7	
1 drug	96	19.6	122	22.8	218	21.3	
2 drugs	94	19.2	97	18.1	191	18.6	
3 drugs	76	15.5	62	11.6	138	13.5	39.094
4 drugs	66	13.5	50	9.3	116	11.3	<0.001
≥ 5 drugs	95	19.4	65	12.1	160	15.6	
Number of falling after age 65							
Not fallen	276	56.3	346	64.7	622	60.7	13.394
1 fallen	138	28.2	143	26.7	281	27.4	<0.001
≥2 fallen	76	15.5	46	8.6	122	11.9	
Total	490	47.8	535	52.2	1025	100.0	

χ^2 : Chi-Square tests

It was found that 47.8% of the elderly included in the study were female, 41.7% were in the 65-69 age group (median age: 70), 72.3% were married, 63.3% lived together with their spouses, 29.3% of them stated that they were illiterate and 47.6% of them stated that they had a good level of income. 33.6% of the elderly were obese while 16.4% had 3 or more health problems diagnosed by a doctor (53.5% had hypertension, 16.1% had heart disease, 24.9% had diabetes, 9.9% had bronchitis (COPD) - asthma). In addition, 17.8% stated that they did not have any health problems, 40.4% stated that they used 3 or more medications, and 39.3% stated that their health got deteriorated over the last year (Table 1). 14.1% (57/403) of those who had fallen reported that they suffered fractures in their body after the fall. 71.3% of the elderly stated that they took their medications regularly, 29.3% stated that they spent their time engaging in different activities, 58.3% stated that they had enough sleep, 29.3%

stated that they were doing exercise, 75.4% stated that they paid attention to their diet, 92.2% stated that they did not smoke, and 53.2% stated that they were in good health (Table 2).

When we look at the emotions experienced by the elderly in the last 30 days, they experienced the following: 12.6% fear, 13.2% depression, 17.6% anger, 10.2% helplessness, 10.5% hopelessness, and 22.9% anxiety. The most frequently used methods to relax when they experienced stress and distress were stated as prayer-worshiping (74.5%), sharing what they felt with others (39.5%), and engaging in an activity (26.7%). Older people stated that they mostly spent their time going to neighbors (40.1%), visiting relatives (30.7%) and friends (28.2%) while approximately one-third (31.7%) stated that they did not go anywhere. In addition, 79.8% of the elderly stated that they had good relations with their neighbors (Table 2).

Table 2: Health and social life behaviors by gender.

Health and social life behaviors	Female		Male		Total		χ^2 p
	Count	%	Count	%	Count	%	
Using medicines properly							
No	95	19.4	199	37.2	294	28.7	39.652
Yes	395	80.6	336	62.8	731	71.3	<0.001

Dealing with something								
No		344	70.2	381	71.2	725	70.7	0.126
Yes		146	29.8	154	28.8	300	29.3	0.722
Enough sleep								
No		220	44.9	207	38.7	427	41.7	4.053
Yes		270	55.1	328	61.3	598	58.3	0.044
Exercising								
No		395	80.6	330	61.7	725	70.7	44.271
Yes		95	19.4	205	38.3	300	29.3	<0.001
Paying attention to nutrition								
No		132	26.9	120	22.4	252	24.6	2.804
Yes		358	73.1	415	77.6	773	75.4	0.94
Smoking status								
Not smoking		464	94.7	251	46.9	715	69.8	278.623
Smoking		12	2.4	68	12.7	80	7.8	<0.001
Giving up		14	2.9	216	40.4	230	22.4	
Perceived health status								
Bad		73	14.9	30	5.6	103	10.0	55.382
Middle		212	43.3	165	30.8	377	36.8	<0.001
Good		205	41.8	340	63.6	545	53.2	
In the last 30 days feeling emotions								
No		202	41.2	313	58.5	515	50.2	30.549
Yes		288	58.8	222	41.5	510	49.8	<0.001
Fear	No	405	82.7	491	91.8	896	87.4	19.347
	Yes	85	17.3	44	8.2	129	12.6	<0.001
Depression	No	396	80.8	494	92.3	890	86.8	29.680
	Yes	94	19.2	41	7.7	135	13.2	<0.001
Anger	No	411	83.9	434	81.1	845	82.4	1.342
	Yes	79	16.1	101	18.9	180	17.6	0.247
Despair	No	413	84.3	507	94.8	920	89.8	30.554
	Yes	77	15.7	28	5.2	105	10.2	<0.001
Hopelessness	No	424	86.5	493	92.1	917	89.5	8.566
	Yes	66	13.5	42	7.9	108	10.5	<0.001
Anxiety	No	349	71.2	441	82.4	790	77.1	18.173
	Yes	141	28.8	94	17.6	235	22.9	<0.001
Using a method of coping with stress								
Not used		28	5.7	52	9.7	80	7.8	5.702
Used		462	94.3	483	90.3	945	92.2	0.017
Doing relaxation exercises	No	482	98.4	518	96.8	1000	97.6	2.565
	Yes	8	1.6	17	3.2	25	2.4	0.109
Dealing something	No	366	74.7	385	72.0	751	73.3	0.974
	Yes	124	25.3	150	28.0	274	26.7	0.324
Sharing with others	No	258	52.7	362	67.7	620	60.5	24.111
	Yes	232	47.3	173	32.3	405	39.5	<0.001
Doing religious activity	No	94	19.2	167	31.2	261	25.5	19.506
	Yes	396	80.8	368	68.8	764	74.5	<0.001

Spending time								
Going somewhere	No	289	59.0	411	76.8	700	68.3	37.603
	Yes	201	41.0	124	23.2	325	31.7	<0.001
Visiting neighbor	No	234	47.8	380	71.0	614	59.9	57.672
	Yes	256	52.2	155	29.0	411	40.1	<0.001
Visiting relatives	No	334	68.2	376	70.3	710	69.3	0.539
	Yes	156	31.8	159	29.7	315	30.7	0.463
Visiting friends	No	446	91.0	290	54.2	736	71.8	171.215
	Yes	44	9.0	245	45.8	289	28.2	<0.001
Neighborhood relationship								
Bad		16	3.3	33	6.2	49	4.8	
Middle		78	15.9	80	15.0	158	15.4	5.683
Good		255	52.0	285	53.3	540	52.7	0.128
Very good		141	28.8	137	25.5	278	27.1	

X²: Chi-Square tests

When the frequency of health problems diagnosed in the elderly (none, 1, 2, 3 or more) was analyzed using the multinomial logistic regression (MLR), it was found that the probability of having 1, 2 or 3 health problems was higher in those with higher BMI, in those who could not exercise, and in those who did not engage in any activity compared to those with no health problems. According to the same analysis, the probability of having two or three health problems was found to be 2.3-3 times higher in women than in men. There was no statistically significant relationship of other variables such as age, marital status, people

living with the patient, education level, level of income, paying attention to their diet, smoking status, religious life, and owning a house to the number of health problems. While the probability of falling once after the age of 65 is higher in those who have a high BMI and deal with something, it is lower in those who live alone or with their spouse, those who doing religious activity more and take care of their nutrition. The probability of falling two or more times after the age of 65 was higher in those who were older, had a lower education level, and did not pay attention to their nutrition compared to those who never fell (Table 3).

Table 3: Analysis of the number of having health problems and falling after age 65 by multinomial logistic regression.

Number of having health problems (Reference group =not having)		β	S.E	p	O.R.	O.R. 95% C.I.	
						Lower	Upper
1 problem	Intercept	-0.122	0.535	0.820			
	Doing exercises	-0.671	0.184	<0.001	0.511	0.356	0.733
	Dealing something	-0.539	0.182	0.003	0.583	0.408	0.833
	Gender=female	0.300	0.191	0.118	1.349	0.927	1.963
	Gender=male	0 ^a	.	.	.	.	.
	BMI	0.042	0.019	0.027	1.043	1.005	1.083
2 problems	Intercept	-1.233	0.554	0.026			
	Doing exercises	-0.683	0.203	<0.001	0.505	0.339	0.752
	Dealing something	-1.193	0.210	<0.001	0.303	0.201	0.458
	Gender=female	0.861	0.203	<0.001	2.366	1.591	3.519
	Gender=male	0 ^a	.	.	.	.	.
	BMI	0.067	0.020	<0.001	1.070	1.029	1.112

2 problems	Intercept	-1.233	0.554	0.026			
	Doing exercises	-0.683	0.203	<0.001	0.505	0.339	0.752
	Dealing something	-1.193	0.210	<0.001	0.303	0.201	0.458
	Gender=female	0.861	0.203	<0.001	2.366	1.591	3.519
	Gender=male	0 ^a	.	.	.	.	.
	BMI	0.067	0.020	<0.001	1.070	1.029	1.112
3 problems and more	Intercept	-2.736	0.597	<0.001			
	Doing exercises	-0.508	0.229	0.027	0.602	0.384	0.943
	Dealing something	-0.612	0.224	0.006	0.542	0.349	0.841
	Gender=female	1.090	0.226	<0.001	2.976	1.909	4.637
	Gender=male	0 ^a	.	.	.	.	.
	BMI	0.089	0.021	<0.001	1.094	1.050	1.139
Number of falling after age 65 (Reference group=not fallen)							
1 fallen	Intercept	-0.125	1.125	0.912			
	Dealing something	0.480	0.154	0.002	1.615	1.194	2.186
	Age	0.002	0.012	0.881	1.002	0.978	1.026
	Living the person = alone	-0.677	0.243	0.005	0.508	0.316	0.817
	Living the person = with spouse	-0.595	0.176	0.001	0.551	0.390	0.779
	Living the person = with children and other people	0 ^a	.	.	.	.	.
	BMI	0.032	0.012	0.009	1.033	1.008	1.058
	Education levels	-0.070	0.059	0.232	0.932	0.830	1.046
	Doing religious activity	-0.336	0.127	0.008	0.714	0.557	0.917
	Having good feeding	-0.422	0.162	0.009	0.656	0.477	0.902
2 fallen and more	Intercept	-2.762	1.483	0.063			
	Interested in something	-0.215	0.242	0.374	0.806	0.502	1.295
	Age	0.040	0.015	0.008	1.041	1.010	1.072
	Living the person = alone	0.006	0.292	0.983	1.006	0.568	1.782
	Living the person = with spouse	-0.344	0.247	0.164	0.709	0.437	1.151
	Living the person = with children and other people	0 ^a	.	.	.	.	.
	BMI	0.015	0.017	0.395	1.015	0.981	1.049
	Education levels	-0.410	0.094	<0.001	0.664	0.552	0.798
	Doing religious activity	-0.229	0.166	0.169	0.796	0.574	1.102
	Having good feeding	-0.498	0.215	0.020	0.608	0.399	0.926

a. Zero value is given because it is the group to be compared. S.E.: Standard Error, O.R.: Odds Ratio, Independent variables: gender, age, marital status, BMI, living the person, education, interested in something having good sleep, doing exercises, having good feeding, harmful habits, doing religious activity, having a house income status

When the presence of disease(s) diagnosed by a doctor was analyzed using the MLR, it was found that the probability of being diagnosed with hypertension (HT) increased 2 times in women compared to men, 1.5 times in those who did not exercise compared to those who exercised. It also increased as the level of religiousness, age,

and BMI increased. There was no statistically significant relationship between HT and marital status, people living with the patient, education level, having regular sleep, paying attention to their diet, smoking and drinking alcohol, owning a house, and level of income. The probability of being diagnosed with diabetes is 1.6 times

higher in women than men, 1.4 times higher in those who do not sleep regularly, and 1.5 times higher in those who do not pay attention to their diet. It also increases as BMI increases. There was no statistically significant relationship between being diagnosed with diabetes and age, marital status, people living with the patient, education level, occupation, doing exercise, smoking and drinking alcohol, having a religious life, owning a house, and level of income. While the probability of being diagnosed with heart disease increased as age and education level increased, it was

also found to be 1.6 times higher in those who did not engage in any activity, and 1.6 (1/0.616) times higher in those who exercised and living in a rented house. There was no statistically significant relationship between being diagnosed with heart disease and gender, marital status, BMI, people living with the patient, sleep, paying attention to their diet, smoking and drinking alcohol, having a religious life, and level of income. While the probability of being diagnosed with COPD-Asthma only increased as the level of income decreased, other variables were not found to be statistically significant (Table 4).

Table 4: Analysis of diagnosed diseases by binary logistic regression.

Diagnosed diseases	β	S.E	p	O.R.	O.R. 95% C.I.	
					Lower	Upper
Hypertension						
Gender (male=1)	0.711	0.131	<0.001	2.037	1.576	2.632
Age	0.029	0.010	0.004	1.030	1.009	1.051
BMI	0.047	0.013	<0.001	1.048	1.023	1.074
Dealing something (yes=1)	0.430	0.140	0.002	1.538	1.169	2.023
Doing exercises (yes=1)	0.380	0.141	0.007	1.462	1.109	1.927
Doing religious activity	0.247	0.115	0.032	1.280	1.022	1.603
Constant	-4.901	0.969	<0.001	0.007		
Diabetes						
Gender (male=1)	0.482	0.147	<0.001	1.619	1.214	2.159
BMI	0.053	0.013	<0.001	1.054	1.029	1.080
Enough sleep (yes=1)	0.327	0.145	0.020	1.387	1.043	1.844
Paying attention to nutrition (yes=1)	0.404	0.159	0.036	1.498	1.096	2.048
Constant	-3.155	0.379	<0.001	0.043		
COPD-Asthma						
Income status	-0.319	0.133	0.017	0.727	0.560	0.944
Constant	-1.116	0.448	0.013	0.328		
Heart disease						
Age	0.034	0.013	0.008	1.035	1.009	1.061
Education levels	0.150	0.067	0.025	1.162	1.019	1.325
Dealing something (yes=1)	0.507	0.201	0.012	1.660	1.120	2.462
Doing exercises (yes=1)	-0.484	0.178	0.006	0.616	0.435	0.873
Having a house (rent=1)	-0.485	0.215	0.024	0.616	0.404	0.938
Constant	-4.833	1.155	<0.001	0.008		

Independent variables: gender, age, marital status, BMI, living the person, education, interested in something having good sleep, doing exercises, having good feeding, harmful habits, doing religious activity, having a house income status

S.E.: Standard Error, O.R.: Odds Ratio, p: Significance

When the emotional states of the elderly in the last 30 days were analyzed using BLR, it was observed that the probability of feeling fear was 2 times higher in women compared to men, and that the risk increased as the BMI, level of income, and level of religiousness decreased and as the number of drugs used and the number of falling accidents increased. The probability of experiencing depression was 1.9 times higher in women compared to men and 2 (1/0.501) times higher in single individuals than in those who were married whereas the other variables included in the analysis were found to be not significant. The probability of experiencing anger is 1.4 (1/0.699) times higher in men compared to women, 1.4 (1/0.687) times higher in those who engage in an activity than in those who do not, 1.5 (1/0.652) times higher in those who do not go out compared to those who go out, and 1.7 (1/0.588) times higher in those who live in a centrally-heated house than those who do not. In addition, the probability of feeling anger increases as the age decreases ($p=0.056$), as the relationship with neighbors deteriorates, and as the number of falling accidents increases. The probability of experiencing the feeling of helplessness is 2.1 times higher in women compared to men,

1.7 (1/0.585) times higher in married people than in single people, 2.7 (1/0.364) times higher in those who go out compared to those who do not, and 1.6 (1/0.628) times higher in those who live in a centrally-heated house compared to those who do not. In addition, the probability of feeling helplessness increases as the number of drugs taken and the number of falling accidents increase and as the level of income ($p=0.056$) and the level of worshipping decrease. The probability of experiencing the feeling of hopelessness is 2.0 times higher in women compared to men and 1.7 times higher in those who do not visit their relatives than in those who do while it increases as the BMI and level of income decrease and as the number of falling accidents increases. The probability of experiencing anxiety is 1.4 times higher in women than in men, 1.4 times ($p=0.056$) higher in those who do not engage in any activity, 1.6 times higher in those who do not visit their relatives, 2.2 times higher in those who do not smoke and take alcohol while it increases as the number of drugs taken and the number of falling accidents increase and as the level of income decreases. Other variables included in the analysis for all emotions were found to be not statistically significant (Table 5).

Table 5: Analysis of elderly's feeling emotions in the last 30 days by binary logistic regression.

Emotions	β	S.E	p	O.R.	O.R. 95% C.I.	
					Lower	Upper
Fear						
Gender (male=1)	0.786	0.202	<0.001	2.195	1.476	3.262
BMI	-0.037	0.018	0.045	0.964	0.930	0.999
Number of taking medicines	0.129	0.056	0.022	1.137	1.019	1.269
Number of falling after age 65	0.184	0.073	0.011	1.202	1.043	1.386
Doing religious activity	-0.319	0.148	0.030	0.727	0.544	0.970
Income levels	-0.306	0.128	0.017	0.736	0.573	0.946
Constant	0.046	0.707	0.948	1.047		
Depression						
Gender (male=1)	0.637	0.206	0.002	1.891	1.262	2.832
Marital status (single=1)	-0.691	0.197	<0.001	0.501	0.341	0.736
Constant	-1.664	0.263	<0.001	0.189		
Anger						
Gender (male=1)	-0.359	0.169	0.034	0.699	0.502	0.973
Age	-0.026	0.014	0.056	0.974	0.949	1.001
Number of falling after age 65	0.243	0.066	<0.001	1.275	1.120	1.452

Dealing something (yes=1)	-0.376	0.176	0.033	0.687	0.486	0.970
Going somewhere (yes=1)	-0.428	0.179	0.017	0.652	0.459	0.925
Neighborhood relationship	-0.285	0.104	0.006	0.752	0.613	0.921
House type (with stove =1)	-0.531	0.164	0.001	0.588	0.426	0.810
Constant	2.008	1.079	0.063	7.447		
Despair						
Gender (male=1)	0.768	0.261	0.003	2.154	1.291	3.595
Marital status (single=1)	-0.537	0.235	0.022	0.585	0.369	0.927
Number of taking medicines	0.152	0.062	0.014	1.164	1.031	1.315
Number of falling after age 65	0.173	0.079	0.028	1.189	1.019	1.386
Going somewhere (yes=1)	-1.011	0.242	<0.001	0.364	0.226	0.584
Doing religious activity	-0.489	0.154	0.002	0.613	0.453	0.830
House type (with stove =1)	-0.464	0.221	0.035	0.628	0.408	0.968
Income status	-0.282	0.147	0.056	0.755	0.565	1.007
Constant	0.691	0.681	0.310	1.995		
Hopelessness						
Gender (male=1)	0.694	0.209	<0.001	2.002	1.328	3.018
BMI	-0.039	0.019	0.047	0.962	0.926	0.999
Number of falling after age 65	0.326	0.071	<0.001	1.385	1.205	1.592
Visiting relatives (yes=1)	0.540	0.242	0.026	1.715	1.067	2.757
Income levels	-0.511	0.133	<0.001	0.600	0.462	0.778
Constant	0.337	0.778	0.665	1.400		
Anxiety						
Gender (male=1)	0.371	0.153	0.015	1.449	1.075	1.954
Number of taking medicines	0.195	0.044	<0.001	1.216	1.115	1.325
Number of falling after age 65	0.163	0.062	0.008	1.178	1.044	1.329
Dealing something (yes=1)	0.338	0.177	0.056	1.402	0.991	1.984
Visiting relatives (yes=1)	0.494	0.171	0.004	1.639	1.171	2.293
Income levels	-0.292	0.103	0.004	0.747	0.611	0.913
Smoking (yes=1)	0.822	0.353	0.020	2.276	1.139	4.547
Constant	-2.384	0.532	<0.001	0.092		

Independent variables: gender, age, marital status, BMI, living the person, education, number of having health problems, number of using drugs, number of falling after age 65, interested in something, having good sleep, doing exercises, having good feeding, harmful habits, going neighbor, going somewhere, visiting relatives, visiting friends, neighborhood relationship, doing religious activity, having a house, a house type, income status
S.E.: Standard Error, O.R.: Odds Ratio, p: Significance

Discussion

Old age is a sensitive period in which many physical and mental problems coexist. Of the participant, 82.2% stated that they had any health problems. The prevalence of health problems in the elderly was found to be 84% in a study conducted by Tufan et al (2018) (20). Hypertension (53.5%) and obesity (33.6%) were found to be the most common health problems in the elderly included in this study (Table 1). Being a woman, not exercising, not engaging in any activity, and high BMI cause an increase

in the risk of having health problems (Table 3). It is reported that hypertension prevalence increases with age in Turkey (21). In a study conducted with the elderly, it was found that almost all participants had chronic diseases and that cardiovascular diseases were the most common type (22). In a similar study, it was found that 93.4% of the elderly had hypertension and that they suffered from type 2 diabetes, hyperlipidemia, coronary artery disease, and chronic obstructive pulmonary diseases,

respectively (23). In another study, the most common chronic diseases in the elderly group were hypertension (48.1%), coronary artery disease (27.0%), diabetes mellitus (23.2%), respiratory diseases (17.2%), and hyperlipidemia (12.8%), respectively (24). It can be said that the decrease in infectious diseases today has been replaced by non-communicable diseases. While hypertension is the most important health problem in the elderly, routine checks are required.

Due to the prevalence of multiple diseases in the elderly, the use of drugs that play a role in controlling these diseases is also an important issue. Almost all of the elderly (80.3%) in our study stated that they used medication. Approximately half of the elderly (40.4%) use at least 3 drugs (Table 1). In similar studies in the literature, it was found that most of the elderly used three or more drugs together (22–24). It is necessary for the elderly group to be informed about their medications and to take them on a regular basis. In this study, 71.3% of the elderly stated that they took their drugs on a regular basis (Table 1). In a study, it was found that half of the elderly people did not know how to take their medication (25). In a study examining the health status of the elderly with home visits, it was found that the elderly did not have sufficient information about their diseases and the drugs they used (26). Informing the elderly about the use of drugs by healthcare personnel can help them adapt to treatment and to prevent complications.

While the probability of falling once after the age of 65 is higher in those who have a high BMI and deal with something, it is lower in those who live alone or with their spouse, those who doing religious activity more and take care of their nutrition. The probability of falling two or more times after the age of 65 was higher in those who were older, had a lower education level, and did not pay attention to their nutrition compared to those who never fell (Table 3). Correlations between religiosity, spirituality, and health were found with other health outcomes. Beneficial effects have been seen

effects have been seen in terms of disability and functional limitation. While the proportion of those who say they see themselves as religious is low in Buddhism-dominated China, Japan and Thailand (12.9%, 33.0%), Muslims such as Pakistan, Nigeria and Turkey (85.0% 99.8%) countries this ratio is very high (27). Praying as a form of religiosity by Muslims can also be considered as physical exercise. For this reason, it may be that those who do more praying are more active than those who do less or not at all, and accordingly, the risk of falling is less in this group.

In addition to physical problems experienced in old age, one of the issues that should be addressed is psychological problems. In our study, it was found that the elderly experienced anxiety (22.9%), anger (17.6%), and depression (13.2%) the most, respectively, in the last 30 days. It was observed that the elderly mostly engaged in praying to cope with these circumstances (74.5%) and that they shared their problems with others (39.5%) (Table 2) Religiosity and spirituality have been shown to be associated with depressive and anxious outcomes, particularly among older people (27). Depression and anxiety disorder were the most common in elderly patients admitted to the psychiatric emergency service and received inpatient treatment (28, 29). Age, poor functional status, and sedentary lifestyle are risk factors for elderly individuals who experience intense depression and anxiety (30, 31). In a study, it was found that the prevalence of depression was higher in elderly people with a history of living alone, being addicted to activities of daily living, having a worse health status compared to the previous year, maltreatment, inability to meet their needs with their income, and a history of psychiatric illness (13). Another study found that the elderly cannot cope with stress (26). Follow-up in elderly health should be comprehensive and holistic. In addition to their physical problems, their psychological status should also be evaluated.

It is important for the elderly to be active in social life. The elderly who

participated in our study stated that they visited their neighbors, relatives, and friends in their social life. In a study, it was found that engaging in intellectual activities was higher in elderly men whereas engaging in recreational activities was higher in women. It was also found that socio-demographic characteristics, mental health, ADLs, independence, and quality of life affected the status of engaging in activities (12). In another study, it was found that the elderly

socialized by going out for walks and home visits (11). In a study investigating the social participation of elderly people living in rural and urban areas, it was found that elderly people living in rural areas had a more limited social life than those living in urban areas (32). Studies demonstrate that elderly people who participate in cultural activities and exercise have a higher level of life satisfaction (33, 34).

Conclusion

Most of the elderly have a diagnosed health problem. Hypertension and obesity are the most common diseases. Approximately half of the elderly use at least 3 medications. It was determined that they experienced anxiety and anger the most in the last month and that they turned to worship more to cope with these circumstances. It was observed that they participated in social life by visiting their friends. Health problems are affected by gender, exercising, comorbidity, BMI, and the status of engaging in an activity.

First of all, the physical and psychological health of elderly people with such risk factors can be protected in order to alleviate their health and life problems as well as providing them with opportunities to participate in social life. The elderly at risk should be followed up more frequently and the elderly who are thought to be in need of help should be directed to relevant institutions. It could also be ensured that the institutions reach out to the elderly by contacting them. In addition, organizing cultural, artistic, and sports activities suitable and accessible to the elderly may be taken into consideration.

Limitations of the study: The study includes only the elderly who applied to primary health care institutions. The limitation of this study is that it does not include the elderly who do not apply to health institutions or apply to hospitals.

Strengths of the study: In cross-sectional

studies conducted in our country, mostly univariate statistical analyzes are used. However, in this study, the independent variables were examined using the multivariate analysis method. By using the multivariate analysis method, confounding factors are taken under control. In addition, examining the records of the elderly who applied to 3 family health centers located in different parts of the city increases the representative power of the sample.

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Consent for publication: In the research, people's images, private data, etc. not collected.

Availability of data and materials: This study was a retrospective registration search that were registration forms of elderly people aged 65 and over which were who applied to the primary healthcare centers (PHC). The study data are stored. The data may be provided if desired.

Authors' contributions: MK. The research's planning, implementation, statistical analysis, writing and reviewing, TU. The research

implementation, conducting surveys, conducting ethical permits, writing and reviewing.

References

- 1- Turkstat. *Elderly Statistics*, 2019. Ankara, Turkey; 2020.
- 2- WHO. *Decade of Healthy Ageing: Baseline Report* [Internet]. Geneva; 2020. Available from: <https://www.who.int/publications/m/item/decade-of-healthy-ageing-baseline-report>
- 3- Güler N, Güler Z, Özsel D. Ageing in the rural area: Quality of life and associated factors in Sivas/Turkey. *Turk Geriatr Derg.* 2016;19(4):245-52.
- 4- Esmailzadeh S, Oz F. Effect of psychosocial care model applied in an "elderly day care center" on loneliness, depression, quality of life, and elderly attitude. *Niger J Clin Pract.* 2020;23(2):189-97.
- 5- El-Sherbiny NA, Younis A, Masoud M. A comprehensive assessment of the physical, nutritional, and psychological health status of the elderly populace in the Fayoum Governorate (Egypt). *Arch Gerontol Geriatr.* 2016 Sep;66:119-26.
- 6- Maresova P, Javanmardi E, Barakovic S, Barakovic Husic J, Tomson S, Krejcar O, et al. Consequences of chronic diseases and other limitations associated with old age - A scoping review. *BMC Public Health.* 2019 Dec 1;19(1):1431.
- 7- Sağlık Bakanlığı. *Türkiye Sağlıklı Yaşlanma Eylem Planı ve uygulama Programı 2015 2020* [Internet]. Ankara; 2015 [cited 2021 Aug 12]. Available from: file:///C:/Users/Mahmut/Downloads/_Eku_tuphane_kitaplar_Sağlıklı_Yaş_2015-2020_Pdf.pdf
- 8- Yılmaz F, Yavuz Çolak M. Evaluation of Beliefs About Medicines and Medication Adherence Among Elderly People with Chronic Diseases. *Türkiye Klin J Heal Sci.* 2018;3(2):113-21.
- 9- Aslan D, Koç E, Çolaklar M. Yaşlıların sağlık/hastalık durumlarının toplum sağlığı açısından değerlendirilmesi. *Sosyol Araştırmaları Derg.* 2018 Oct 30;21(2):29-48.
- 10- Pinto JM, Neri AL. Trajectories of social participation in old age: a systematic literature review. *Rev Bras Geriatr e Gerontol.* 2017 Apr;20(2):259-72.
- 11- Aşut Ö, Vaizoğlu S, Bozyel F, Sucuoğlu A, Pektekin C, Asif G, et al. Lefkoşa'nın bir bölgesinde altmış beş yaş ve üzeri bireylerin sosyal yaşama katılımı. *Cukurova Med J.* 2018 Jun 30;43(2):398-410.
- 12- Yaprak Çetin S, Gökalan Kara İ, Kitiş A. Evde Yaşayan Yaşlılarda Sosyal Katılımı Etkileyen Faktörlerin İncelenmesi Investigation of Factors Affecting Social Participation in Elderly People Living at Home Sebahat yaprak ÇETİN. *Ergoter ve Rehabil Derg.* 2014 Jan 1;2(1):11-20.
- 13- Cengiz Özyurt B, Elbi H, Serifhan M. Prevalence of depression in the elderly population of manİsa and related risk factors. *Turk Geriatr Derg.* 2018 Dec 24;21(4):579-87.
- 14- Akı Ö. Yaşlılık ve Ruh Sağlığı. *Toplum ve Hekim.* 2020;35(4):308-12.
- 15- Yıldırım F, Büyükkaya Duman N, Keskin M. Yaşlı Kadınlarda Ruh Sağlığı Sorunlarına Güncel Bakış. In: *Büyükkayacı Duman N, editor. Yaşlılık ve Kadın Sağlığı.* 1. Ankara: Türkiye Klinikleri; 2019. pp. 58-61.
- 16- Yerli G. Yaşlılık dönemi özellikleri ve yaşlılara yönelik sosyal hizmetler. *J Int Soc Res.* 2017 Oct 25;10(52):1278-87.
- 17- Mandiracioğlu A. Yaşlı sağlığının sosyal belirleyicileri Social determinants of health among older people. *Ege J Med.* 2016;55(6):6-11.
- 18- Fernández-Mayoralas G, Rojo-Pérez F, Martínez-Martín P, Prieto-Flores ME, Rodríguez-Blázquez C, Martín-García S, et al. Active ageing and quality of life: Factors associated with participation in

- leisure activities among institutionalized older adults, with and without dementia. *Aging Ment Heal.* 2015 Nov 2;19(11):1031-41.
- 19- Asi Karakaş S, Durmaz H. Yaşlılık dönemi psikolojik özellikleri ve moral. *Kocatepe Tıp Derg.* 2017 Jan 17;18(1):32-6.
- 20- Tufan İ, Seeberger B, Öztürk S, Ayan S, Özgür Ö. Antalya yaşlılık araştırması (AYAR©) yaşlıların sağlık durumu. *Geriatr Bilim Derg [Internet].* 2018 [cited 2021 Aug 7];1(2):49-60. Available from: <https://dergipark.org.tr/en/pub/geriatrik/issue/40016/453581>
21. Sengul S, Akpolat T, Erdem Y, Derici U, Arici M, Sindel S, et al. Changes in hypertension prevalence, awareness, treatment, and control rates in Turkey from 2003 to 2012. *J Hypertens.* 2016 Jun;34(6):1208-17.
22. Sarımeahmet D, Hintistan S. The Prevalence of Chronic Diseases and Drug Use Among Geriatric Cases in Ardesen County of Rize Province. *Bezmialem Sci.* 2017 Dec 13;5(3):93-100.
23. Özdemir Ö, Akyüz A, Doruk H. Compliance with drug treatment in geriatric patients with hypertension. *Med J Bakirkoy.* 2016 Dec 27;12(4):195–201.
24. Öztürk Z, Uğraş KG. Yaşlı Hastalarda İlaç Kullanımı ve Polifarmasi. *Tepecik Eğit ve Araşt Hast Derg.* 2017;27(2):103-8.
25. Şişe Ş, Özder A, Üniversitesi SD, Fakültesi SB, Üniversitesi BV, Fakültesi T, et al. Afyonkarahisar İlinde Evlerinde Yaşayan 85 Yaş ve Üstü İleri Yaşlıların Genel Yaşam Koşullarının Değerlendirilmesi. *Konuralp Tıp Derg.* 2016;8(2):124-31.
26. Özcan A, Özdiil K, Küçük Öztürk G. Determination of Health Care Needs in Older Individuals Visited at Home. *Türkiye Klin J Heal Sci.* 2019;4(3):300-5.
27. Zimmer Z, Jagger C, Chiu C-T, Ofstedal MB, Rojo F, Saito Y. Spirituality, religiosity, aging and health in global perspective: A review. *SSM - Popul Heal.* 2016 Dec 1;2:373-81.
28. Yeşil B, Han Almiş B. Bir ruh sağlığı hastanesi acil servisine başvuran yaşlı hastaların sosyo demografik ve klinik özellikleri. *firattipdergisi.com.* 2017;22(3):113-7.
29. Aydın M, Şen B. Bir Üniversite Hastanesi Psikiyatri Kliniğinde Yatırılarak Tedavi Gören Yaşlı Hastaların Tanı ve Tedavilerinin Değerlendirilmesi. *Genel Tıp Derg.* 2020 Mar 26;30(1):5-10.
30. Şahin Onat Ş, Ünsal Delialioğlu S, Uçar D. The risk of depression in elderly individuals, the factors which related to depression, the effect of depression to functional activity and quality of life. *Türk Geriatr Derg.* 2014;17(1):35-43.
31. de Oliveira LDSSCB, Souza EC, Rodrigues RAS, Fett CA, Piva AB. The effects of physical activity on anxiety, depression, and quality of life in elderly people living in the community. *Trends Psychiatry Psychother.* 2019 Mar;41(1):36-42.
32. Şahin ÜK, Demircioğlu A, Kırdı N. Kentsel ve kırsal bölgede yaşayan geriatric bireylerin duygusal, kognitif, motor fonksiyonları ve sosyal işlevselliklerinin incelenmesi. *Türk Fiz ve Rehabil Derg.* 2018 Aug 27;29(2):24-30.
33. Salar S, Günal A, Pekçetin S, Huri M, Kashefi Mehr B, Katırcıbaşı G, et al. Yaşlılarda aktivite, çevre ve yaşam memnuniyeti ilişkisi/ Relationship Between Activity, Environment and Life Satisfaction in Older Adults. *Ergoter ve Rehabil Derg.* 2018;4(2):89-96.
34. Göktaş A, Pekçetin S, Tekindal B, Kayıhan H, Uyanık M. Yaşlı bireylerde aktivite tercihlerinin bilişsel beceriler ve yaşam memnuniyeti üzerine etkisi. *Ergoter ve Rehabil Derg.* 2016;4(1):1-14.