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RESEARCH

AGEING IN THE RURAL AREA: QUALITY OF LIFE AND ASSOCIATED FACTORS IN SİVAS/TURKEY*

ABSTRACT

Introduction: This study aimed to identify the Quality of Life (QOL) and associated factors among rural elders. They represent a growing percentage in the national population today and have become increasingly isolated in villages that are being drained due to migration flows from rural to urban areas.

Materials and Method: The universe of the present cross-sectional study consists of people of and over the age of 65 living in villages of the Zara district in Sivas Province. The study sample is composed of 20 villages and 577 elderly individuals living in these villages. The data were collected with the use of a personal information form, the WHOQOL-Bref QOL scale, the Geriatric Depression scale, and the Barthel Index of Activities of Daily Living through face-to-face interviews. The data thus obtained were evaluated on the SPSS software through the implementation of the distribution measures, Mann-Whitney U test, and Kruskall-Wallis Variance test.

Results: Twenty-five per cent of the elderly individuals included in the study perceive their health status as being poor. The difference between gender, age, education, economic status, health perception, dependency information, and score averages in all subfield scores of QOL among the elderly was found to be statistically significant ($p<0.05$).

Conclusion: Advanced age, female gender, chronic disease, depression, perception of health as poor, dependency, and constantly living in a village were determined to be among the negative factors that affect the elderly's QOL.

Key Words: Rural Population; Aged; Quality of Life; Depression; Risk Factors.

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ARAŞTIRMA

KIRSAL KESİMDE YAŞLILIK: YAŞAM KALİTESİ VE İLİŞKİLİ FAKTÖRLER, SİVAS/TURKEY*

ÖZ

Giriş: Günümüzde kırdan kente doğru yaşanan hızlı göç nedeniyle boşalan köylerde giderek yalnızlaşan ve ülke nüfusu içerisinde oransal olarak artış gösteren kırsal alanda yaşayan yaşlıların Yaşam Kalitesi ve ilişkili faktörleri belirlemek amacıyla yapılmıştır.

Gereç ve Yöntem: Kesitsel tipte yapılan çalışmanın evrenini Sivas ili Zara ilçesine bağlı köylerde yaşayan 65 yaş ve üzeri nüfus oluşturmaktadır. Örneklemini ise 20 köy ve bu köylerde yaşayan 577 yaşlı birey oluşturmaktadır. Veriler yüz yüze görüşme yoluyla kişisel bilgi formu, WHOQOL-Bref Yaşam Kalitesi ölçeği, Geriatrik Depresyon ölçeği ve Günlük Yaşam Aktiviteleri İndeksi aracılığı ile toplanmıştır. Elde edilen veriler SPSS programında, dağılım ölçütleri, Mann Whitney U testi, Kruskall-Wallis Varyans testi uygulanarak değerlendirilmiştir.

Bulgular: Araştırma kapsamına alınan yaşlıların %25'i, kendi sağlıklarını kötü olarak algılamaktadır. Yaşlıların cinsiyeti, yaşı, öğrenim durumu, ekonomik durumu, sağlığı algılama ve bağımlılık durumu ile yaşam kalitesinin tüm alt alan puan ortalamaları arasındaki fark istatistiksel olarak anlamlı bulunmuştur ($p<0.05$).

Sonuç: İleri yaş, kadın cinsiyeti, kronik hastalığın olması, depresyonun varlığı, sağlığını kötü olarak algılama, bağımlı olma ve sürekli köyde yaşama gibi faktörler yaşlıların yaşam kalitesini etkileyen olumsuz faktörler olarak belirlenmiştir.

Anahtar Sözcükler: Kırsal Kesim; Yaşlılık, Yaşam Kalitesi, Depresyon, Günlük Yaşam Aktiviteleri, Risk Faktörleri.

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INTRODUCTION

Similar to other countries around the world, the elderly population in Turkey is also on the rise. According to the 2014 data from the Turkish Statistical Institute (1), the percentage of the population over the age of 65 in the general population was 3.4% in 1955, whereas this rose to 8% in 2014. Population projections give way to the estimate that the ratio of the elderly will increase by 10.2% in 2023, 20.8% in 2050, and 27.7% in 2075 (1).

The increase in the elderly population and lengthened lifespan have led to a rise in chronic, debilitating, and stressful diseases. More importance is also attached to the Quality of life (QOL). In this context, improved QOL among the elderly has become one of the most important goals in the field of health (2-4). The studies undertaken to examine QOL among the elderly indicate that age, gender, education, chronic diseases, physical incapacities, physical activity status, economic status, and depression are important factors that affect it (3-10).

The determination of QOL among the elderly and the identification of factors affecting it are of great importance for providing protective and preventive interventions for at-risk seniors (3). Thus, it is important to identify the factors affecting health with a view to improving QOL among the elderly.

After the immense attention provided by Western countries, studies on old age and QOL have also become common in Turkey in recent years; moreover, a higher number of scientific studies have been conducted on the elderly with a focus on QOL factors (2–4,5–8,10). However, since a majority of these studies emphasized on the elderly's QOL and needs in urban centers, the current knowledge of QOL in rural areas is limited and insufficient. The determination of QOL among the elderly and the identification of factors affecting it are of great importance for ascertaining the protective and preventive interventions for at-risk individuals. Therefore, the present study aimed to identify QOL and affecting factors among the elderly

MATERIALS AND METHOD

Study Design and Sample Selection

This cross-sectional study was conducted between 1st and 21st August 2014.

Universe: The universe of the present cross-sectional study comprised people of and over the age of 65 living in villages of Zara district in the Sivas Province.

Sample: The number of individuals of and over the age of 65 living in Zara and its villages is 4001 according to the data obtained from the Address-Based Population Registration System (2012) (11). The number of individuals of and over the age of 65 living in the villages of Zara is 2566. The sample size was statistically calculated through the formula $n=Nt^2 pq/d^2 (N-1)+ t^2 pq$. Accordingly, the sample included 577 elderly individuals. At the second stage, 20 villages were selected from Zara's 64 villages in the east, west, north, and south directions through the proportional stratified sampling technique. At the third stage, home addresses of 65 age and older people were taken from the village Mukhtars and data of all elderly individuals over the age of 65 were collected and the elderly to be included in the study from such households. The study identified the elderly in their villages on a regular basis to be spending at least six months a year in their respective villages.

As data collection tools, the study utilized a personal information form, the WHOQOL-Bref QOL scale, Depression Scale, and Index of Activities of Daily Living.

Personal Information Form: This form includes 20 questions to collect information regarding gender, age, marital status, education, income status, employment status, permanent or temporary living in village, chronic disease, and smoking and alcohol consumption.

WHOQOL-Bref QOL Scale: This scale, developed by the World Health Organization, comprises 26 questions related to perceived QOL in general. The study that determined the validity and reliability of the scale in Turkey was undertaken by Eser *et al* (12). The WHOQOL-Bref–TR version consists of 27 questions along with a national question added to the scale during the studies concerning its validity in Turkish. The scale covers five fields including physical health, mental health, social relationships, environment, and national environment. WHOQOL-Bref scores are calculated in a range of 0–20. The higher the scale's score, the higher the QOL is considered to be (12).

Geriatric Depression Scale: Developed by Yesavage *et al.* (13), the scale was made subject to validity and reliability studies in Turkey by Sağduyu *et al.* (14) in 1997. The scale consists of 30 questions based on self-declaration and every item in the scale is given a response of "yes" or "no.? For the scoring of the scale, 1 point is given to every response in favor of depression, while no point is given to responses that do not support depression. The consequently obtained score is regarded as the total depression score. The scale is evaluated with 0–10 points considered as a reference to "no symptoms of depression," 11–13 points as a reference to "possible depression," and 14 points and higher as a reference to "definitive depression."

Barthel Index of Activities of Daily Living: This index, developed by Mahoney and Barthel in 1965, identified the level of independence of the elderly involved in activities of daily living (15). Studies concerning its validity and reliability for Turkey were undertaken by Küçükdeveci *et al.* (16). The Barthel index operates in a score range of 0–100 with 0 signifying full dependency and 100 signifying full independence. In the Index of Activities of Daily Living, a score of 0–20 points to full dependency; 21–61 to severe dependency; 62–90 to moderate dependency; 91–99 to mild dependency; and 100 to independence.

The data were collected through face-to-face interviews held at households following the explanation of the study's objective to the elderly.

The permits necessary for the study were obtained from the Ethics Board of Abant İzzet Baysal University, Zara District Governorate, and Village Mukhtars. Each individual participating in the study was duly informed and explained that participation was voluntary. Accordingly, individuals included in the study were provided with information on the study's objective and contents and their consent was obtained thereafter.

Table 1— Socio-demographic Features of Elderly (n= 577).

Group	n	%
Age		
65-69	185	32.1
70-74	147	25.5
75-79	112	19.4
80 and older	99	17.2
Unknown age	34	5.9
Gender		
Female	324	58.2
Male	253	43.8
Educational status		
Illiterate	337	58.4
Literature	63	10.9
Elementary school graduate	165	28.6
Secondary school graduate	12	2.1
Economic status		
Good	243	42.1
Moderate	257	44.5
Poor	77	13.3
Time spent in village		
Always	148	25.6
At least six months	429	74.4

Table 2— Distribution of Health Status of Elderly.

Characteristics	n	%
Perception of health		
Good	256	44.4
Moderate	177	30.6
Poor	144	25.0
Smoking		
Never smoked	403	69.8
Current smoker	27	4.7
Given up	147	25.5
Alcohol use		
No	562	97.4
Yes	15	2.6
Presence of chronic disease (n= 577)		
Yes	490	84.9
No	87	15.1
Disease (n=490)		
Hypertension	351	71.6
Diabetes	131	26.7
Cardiovascular disease	103	21.0
Rheumatism-arthritis	39	0.8
Chronic Obstructive Lung	74	15.1
Other diseases*	19	3.8
Body Mass Index		
Normal	81	14.0
Overweight	202	35.0
Obese	294	31.5
Dependency		
Moderately dependent	237	41.1
Mildly dependent	89	15.4
Fully independent	251	43.5
Depression		
No depression	251	44.0
Possible depression	84	14.7
Definitive depression	236	41.3

*Cancer, Depression, Chronic Kidney Diseases.

The data obtained through the WHOQOL-Bref QOL scale and Barthel Index of Activities of Daily Living were evaluated on the SPSS software through the implementation of the distribution measures, Mann-Whitney U test, and Kruskall-Wallis Variance test.

RESULTS

Considering Table 1, 32.1% of the elderly included in the study were found to be in the 65–69 age group; 17.2% to be in the age group defined as 80 and above; 58.2% to be fe-

Table 3— Distribution of Average QOL Scores of Elderly.

QOL Subfields	Minimum Score		$\bar{X}$	±ss
Physical health	7	18.00	12.733	1.912
Mental health	6	19.00	13.134	2.262
Social	4	20.00	13.811	3.043
Environmental	7	20.00	14.215	2.310
National subfield	6	18.00	13.071	2.051

male; 58.4% to be illiterate; 13.3% to be in an economically poor status; and 25.6% to be living in the village on a regular basis.

Table 2 indicates that 25% of the elderly defined their perception of health as poor. Twenty-five per cent of the participants had given up smoking; 4.7% were still smoking; and 2.6% consumed alcohol.

Considering Table 3, the highest QOL score among the elderly (14.215±2.310) was observed in the environmental subfield, while the lowest average score (12.733±1.912) was detected in the physical health subfield.

Considering Table 4, the difference between gender, age, educational status, and economic status of the elderly and subfield averages of QOL was found to be statistically significant ($p<0.05$). The average scores of individuals who lived in the village during summer months in the national field and social relationships exhibited a statistically significant difference when compared to those always living in the village ($p<0.05$).

Considering Table 5, the average scores of the elderly with chronic diseases in all subfields of QOL other than social relationships were found to be lower than those not suffering from such diseases. The difference between the groups is also statistically significant ($p<0.05$). No statistically significant difference was observed between body weight and the average scores of the elderly in the subfields of QOL except for the physical health subfield ($p>0.05$). The difference between depression, dependency, and health perception of the elderly and their average scores in the QOL subfields was determined to be statistically significant ($p>0.05$).

Discussion

The present study identified QOL and relevant factors among individuals of and over the age of 65 living in villages of Zara district in the Sivas province and determined the lowest average scores in the physical health subfield and the highest average scores in the environmental subfield among the subfields of QOL. The reason behind the high scores in the environmental subfield may be due to the elderly's thorough knowledge of their surroundings and their ability to move more freely compared to urban spaces. Although not everything in the lives of the rural elderly is in consonance with their wishes, this finding may depend upon the fact that they are faced with fewer problems in transportation while visiting their relatives and friends; they communicate more easily with others; and they encounter fewer environmental problems, including air pollution, when compared to those elderly living in cities. The lower scores obtained in the physical health subfield when compared to the other subfields may be based upon the increasing pains and ills and incrementally more chronic health problems they encounter as they get older. This result may have also been affected by the fact that 84.9% of the participating elderly had been diagnosed with chronic diseases, which potentially affect their QOL; 41.3% had depression (Table 2); and they had more limited access to care and medical services provided by the public sector in rural areas.

The difference between gender, age, educational status, and economic status of the elderly and subfield averages of QOL was found to be statistically significant ($p<0.05$). The number of health problems encountered by individuals increases with age, and social inclusion and self-confidence declines among the elderly, thereby leading to a deterioration in their QOL (4,8). The relevant studies in the literature also identified a decline in average scores in the subfields of QOL along with age (3,4,5–8). These results are in concordance with the present study's findings.

The study determined the average scores of female participants in the subfields to be lower than those of male participants ($p<0.05$). The relevant studies also identified lower levels of QOL among women than among men (3-6,8,9,17). Kirchengast and Haslinger (9) reported the QOL among women over the age of 70 was lower than men of the same age

Table 4— Distribution of Average QOL Scores of the Elderly by Socio-demographic Characteristics.

	Subfields of QOL				
Characteristics	**Physical Health X ± SD**	**Mental Health X ± SD**	**Social X ± SD**	**Environmental X ± SD**	**National Subfield X ± SD**
Sex					
Female	12.413±1.931	12.661±2.302	13.530±2.995	13.546±2.293	12.524±2.032
Male	13.142±1.811	13.739±2.063	14.170±3.072	15.075±2.035	13.773±1.855
	MU=32434.000	MU=30249.000	MU=36695.000	MU=25021.000	MU=26246.000
	p=0.0001	p=0.0001	p=0.029	p=0.0001	p=0.0001
Age groups					
65-69 years	13.108±1.950	13.356±2.143	14.302±2.955	14.535±2.164	13.351±1.914
70-74 years	13.000±1.775	13.244±2.256	13.775±3.320	14.157±2.564	13.034±2.235
75-79 years	12.794±1.650	13.366±2.180	13.812±2.861	14.339±2.145	13.169±1.967
80 and older	11.828±1.938	12.478±2.422	12.899±2.822	13.798±2.276	12.717±2.045
	KW=30.995	KW=11.319	KW=15.082	KW=8.714	KW=8.574
	p=0.0001	p=0.010	p=0.002	p=0.033	p=0.036
Educational status					
Illiterate	12.412±1.931	12.792±2.251	13.563±2.931	13.664±2.312	12.614±2.061
Literature	12.666±1.750	12.529±2.365	13.587±2.751	14.254±2.023	13.079±1.789
Elementary school	13.400±1.790	14.030±2.025	14.448±3.319	15.243±2.027	13.914±1.828
Secondary school or higher	12.916±1.621	13.583±1.621	13.166±2.657	15.416±2.234	14.333±1.969
	KW=31.401	KW=37.219	KW=9.683	KW=57.167	KW=51.865
	p=0.0001	p=0.0001	p=0.021	p=0.0001	p=0.0001
Economic status					
Good	12.979±1.747	13.351±2.078	14.205±2.829	14.979±2.050	13.727±1.808
Moderate	12.657±1.946	13.221±2.278	13.645±2.999	14.011±2.167	12.906±1.944
Poor	12.207±2.178	12.155±2.534	13.116±3.652	12.493±2.495	11.558±2.227
	KW=9.745	KW=14.034	KW=5.681	KW=62.873	KW=60.449
	p=0.008	p=0.001	p=0.058	p=0.0001	p=0.0001
Time spent in village					
Always	12.094±2.007	12.747±2.257	13.547±2.775	13.331±2.408	12.317±2.125
Summers (at least six months)	12.953±1.829	13.267±2.251	13.902±3.128	14.521±2.196	13.331±1.961
	MU=24085.000	MU=27366.000	MU=29145.000	MU=22960.500	MU=23511.500
	p=0.0001	p=0.011	p=0.132	p=0.0001	p=0.0001

group. These results are similar to the findings of the present study. Özyurt *et al.* (4) emphasized that compared to men, the lower average scores obtained by women in QOL were affected by the higher incidence of chronic diseases among women and the consequential difficulties encountered by them in completing their daily chores due to a decline in physical mobility.

The study identified higher average scores in QOL among individuals with secondary school or higher education levels than others. Studies undertaken in Turkey also determined that QOL increased in consonance with the level of education (4,6,7,8,17,18). The QOL of individuals is improved and their pursuit and practices for further development heightened along with higher educational levels and this can have a positive impact on QOL. However, a striking feature is that the social subfield of QOL among the elderly of secondary school or higher educational levels exhibited lower scores than those in the other groups. The reason for this may be the higher expectations of the individuals with higher educational levels and their inability to satisfy such levels in daily life.

The studies in the relevant literature also determined that the QOL and perceptions concerning QOL are more advanced

Table 5— Distribution of Average QOL Scores of the Elderly by Health Characteristics.

	Physical health	Mental Health	Social	Environmental	National Subfield
Chronic disease					
Yes	12.646±1.943	13.017±2.246	13.795±2.952	14.118±2.301	12.981±2.033
No	13.218±1.652	13.789±2.258	13.896±3.534	14.758±2.297	13.574±2.088
	MU=17266.500	MU=17105.000	MU=20980.500	MU=17920.500	MU=17795.000
	p=0.004	p=0.003	p=0.813	p=0.018	p=0.014
Body weight					
Normal	12.543±1.923	12.814±2.495	13.493±3.122	13.753±2.718	12.592±2.407
Overweight	13.074±1.836	13.402±2.110	14.242±3.067	14.507±2.238	13.333±1.980
Obese(class 1)	12.651±1.939	13.138±2.235	13.618±3.031	14.116±2.119	12.994±1.907
Obese (class I1)	12.439±1.904	12.822±2.413	13.560±2.962	14.158±2.411	13.056±2.100
Morbid obese	11.500±2.258	13.833±0.752	13.833±2.041	14.666±1.632	13.333±1.751
	KW=11.201	KW=4.803	KW=5.785	KW=4.840	KW=4.914
	p=0.024	p=0. 308	p=0.216	p=0.304	p=0.296
Perception of health					
Good	13.359±1.679	13.628±2.036	14.234±2.707	14.705±2.087	13.431±1.859
Moderate	12.615±1.808	13.064±2.245	13.700±3.116	14.180±2.129	13.096±1.881
Poor	11.763±2.003	12.340±2.438	13.194±3.401	13.388±2.650	12.402±2.395
	KW=59.916	KW=27.020	KW=7.399	KW=24.619	KW=18.260
	p=0.0001	p=0.0001	p=0.025	p=0.0001	p=0.0001
Depression					
No depression	13.334±1.651	13.840±2.106	14.745±2.681	15.151±1.891	13.872±1.687
Possible depression	12.773±1.785	13.273±2.020	13.523±3.094	14.650±1.663	13.361±1.534
Definitive depression	12.101±2.024	12.370±2.276	12.919±3.137	13.055±2.428	12.105±2.181
	KW=49.906	KW=48.448	KW=41.907	KW=98.091	KW=87.744
	p=0.0001	p=0.0001	p=0.0001	p=0.0001	p=0.0001
Dependency on others					
Severely Dependent	12.207±1.902	12.641±2.188	13.182±2.860	13.762±2.316	12.724±2.090
Moderately Dependent	12.865±1.919	13.539±2.100	13.943±2.781	14.528±2.316	13.258±2.090
Fully Independent	13.191±1.794	13.474±2.288	14.346±3.200	14.536±2.316	13.336±2.090
	KW=38.815	KW=23.293	KW=22.946	KW=18.591	KW=13.922
	p=0.0001	p=0.0001	p=0.0001	p=0.0001	p=0.003

among individuals with a good economic status or regular monthly income (17,19). The present study also identified lower average scores in QOL among individuals with a poor economic status ($p<0.05$). These results indicate that elderly individuals should be provided with the economic support they need to sustain a minimum level in life.

The study also determined a higher average score among the elderly living in the village during summer months when compared to those who live in the village on a regular basis. Aydın *et al.* (3) found significantly higher average scores in QOL among the elderly living in cities than among those living in rural areas ($p<0.05$). As the elderly are more prone to diseases, it is of great importance for them to be able to access healthcare services. Such access is even more difficult during winter months. The reason behind the low level of QOL among elderly individuals living in villages may be represented by the problems they indicated. Participating elderly specified their important problems as insufficient infrastructure in villages, notably problems in heating and transportation during winter months, and difficulties in accessing healthcare services with an emphasis on renewing their prescriptions.

The average scores of elderly suffering from a chronic disease in the subfield of social relationships were identified to be statistically significant compared to those without such diseases ($p<0.05$). A number of studies have also identified lower levels of QOL among old individuals suffering from chro-

nic diseases (4,6). Sönmez *et al.* (2007) determined chronic diseases to be significant risk factors for QOL (2). Chronic diseases observed in old age restrict the active life of an individual, prevent them from maintaining their self-care, and reduce their QOL (20).

As shown in the relevant studies (2,18), factors such as reduced physical capabilities, decline in cognitive functions, difficulties in maintaining daily activities and social relationships, deterioration in economic status, individuals living alone, and weak social support systems increase the incidence of depression among the elderly (21) and affect the QOL of individuals. The present study also identified a lower average score among senior individuals suffering from definitive depression in QOL and all of its subfields when compared to the other groups.

Forty-four per cent of the elderly included in the study specified their health perception to be good and 25% as poor. The difference between the health perception of elderly individuals and their average scores in the subfields of QOL was identified to be statistically significant ($p<0.05$). In the scope of a study undertaken by Doğanay and Uçku (22), 39.7% of the participating elderly individuals assessed their health perception as good and 60.3% as poor. The percentage of elderly with a poor perception of health was identified to be lower in the study. However, a review of the literature has not revealed any study comparing QOL and health perception among the elderly in the society. Doğanay and Uçkun identified that poor health perception among the elderly predicted coroner incidents and death. When correlated with age, gender, economic status, educational status, and risk level, the mortality rate among old individuals with a poor perception of health was identified to be 4.4 times higher with a statistical significance.

The study did not detect a statistically significant difference between the body weight of the elderly and their average scores in all subfields except for the national subfield and physical health ($p>0.05$). Severely overweight individuals were identified to have a lower average score in the subfield of physical health. The relevant studies identified that the QOL among underweight and overweight individuals was lower than those with normal weight (12,23).

The increase in health problems encountered in old age puts further difficulty on individuals' abilities to maintain their daily lives independently. Therefore, they are faced with being dependent on others for activities of daily life in advanced age. Dependence on others for daily life becomes more common and physical incapability increases in advanced age (22). This situation affects QOL among the elderly. The present study also identified a higher average score in QOL among independent elderly individuals ($p<0.05$). The elderly with severe dependence were identified as representing lower average scores in QOL and its subfields when compared to the other groups.

Consequently, factors such as advanced age, gender, chronic disease, perception of health as poor, depression, dependency, and constantly living in a village were determined to be negative factors that affect the elderly's QOL. Along with the increase in the elderly population, protection of their QOL and provision of a higher quality of life for them should become priority objectives in healthcare not only for the present but also for the future. Specifically, women, those of and over the age of 80, those with chronic diseases, depression, severe dependency on others, poor perception of health, and those constantly living in the village are at-risk groups; they should be monitored more closely in terms of their QOL. In addition, being overweight, suffering from chronic diseases or depression should be prevented among the elderly through the provision of training, consultancy, care, and medical services.

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