

# The Effect of Perceived Social Support Systems and Empowerment Approaches on the Quality of Life in Elderly Patients

Demet Ünalın<sup>1</sup>, Elif Nisa Yayla<sup>2</sup>, Hakan Baydur<sup>3</sup>, Fatih Altan<sup>1</sup>

<sup>1</sup>Erciyes University Halil Bayraktar Health Services Vocational College, Kayseri, Turkey

<sup>2</sup>Kayseri University Social Sciences Vocational College, Kayseri, Turkey

<sup>3</sup>Manisa Celal Bayar University Faculty of Health Sciences, Department of Social Work, Manisa, Turkey

## Abstract

**Objective:** This study investigated the effect of social support systems and strengthening approaches on the quality of life in elderly patients.

**Materials and Methods:** This cross-sectional study was conducted with 390 participants above the age of 65 receiving service at the Kayseri State Hospital Geriatric Care Center between September-October 2019. The World Health Organization quality of life scale module and multidimensional scale of perceived social support and the patient perceptions of empowerment scale were used as the data collection tools. The effect of multidimensional scale of perceived social support and the patient perceptions of empowerment scale on the quality of life was tested using structural equation modeling.

**Results:** It was determined that education, income, smoking, and chronic disease were significantly related to the quality of life of the elderly. When the effects of multidimensional scale of perceived social support on the quality of life were modeled, it was determined that social support and patient empowerment influenced the quality of life. In the model, patient empowerment significantly affected the quality of life with a standardized regression coefficient of 0.47 and a patient empowerment scale of 0.59.

**Conclusion:** Patient empowerment level has a significant effect on the quality of life of the elderly, with social support. Patient empowerment is an essential determinant of the quality of life in the elderly.

**Keywords:** Health-related quality of life, patient empowerment, perceived social support, patient involvement

## Introduction

The quality of life (QOL) is seen as one of the universal objectives that societies aim to reach (1). In addition to the QOL effects on healthcare, there are physical, psychological, social, and multidimensional factors in measuring health-related QOL (2).

This study found that QOL, including physical health, psychological state, and social relationships, shape individuals' culture and value systems and are significantly related to empowerment and social support concepts. Individual desire and collaborative effort are linked in healthcare (3). Social support, which includes emotional, financial, and information support of individuals based on their communication networks and mutual liability, contributes to the comfort and lives of the elderly

and protects them from various conditions (4). Social support is an important issue, especially for the elderly. The limitations of common life opportunities such as the loss of a loved one, retirement, physical disorders restricting their interaction, or chronic diseases might endanger the support networks of this age group (5).

Empowerment is the process of helping people to gain control over the factors affecting their lives. People empowered can obtain the capacity to influence other people around them and contribute to their well-being (6). Today, with the increasing elderly population, it is vital to ensure that patients control their lives to the extent possible to eliminate health problems due to chronic diseases and reduced competence (7). The elderly with chronic illnesses, as one of many vulnerable groups, should

**Address for Correspondence:** Demet Ünalın, Erciyes University Halil Bayraktar Health Services Vocational College, Kayseri, Turkey

**Phone:** +90 352 437 52 79 **E-mail:** unalandemet@gmail.com **ORCID:** orcid.org/0000-0001-9854-437X

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be empowered to enhance the QOL related to health and reduce hospitalization and healthcare costs (8).

The purpose of this study, conducted on patients receiving outpatient treatment at the Kayseri Geriatric Care Center in Kayseri, Turkey, was to evaluate the empowerment, perceived social support systems and QOL levels of the patients 65 and over with chronic diseases related to their demographic characteristics. In this context, social support and QOL factors such as the participants' socio-demographic features, health conditions, social networks, and level of patient empowerment were analyzed.

## Materials and Methods

The cross-sectional study included 1.500 patients over the age of 65 who were treated between September and October 2019. In advance, 390 patients were selected for the sample using the Power Analysis and Sample Size program under the conditions of  $\alpha = 0.05$ , power = 0.80, and error of 5% based on the study by Softa et al. (9). Patients selected for the sample units were chosen by the simple random sampling method, one of the probability sampling methods.

### Data Collection Tools

The scale of World Health Organization Quality of Life Scale (WHOQOL-OLD), the patient perceptions of empowerment scale (PPES), and multidimensional scale of perceived social support (MSPSS) were used as data collection tools. The data collection was accomplished using face-to-face interviews with the participants after examinations in specially allocated areas in the polyclinics.

### Personal Information Form

The form includes 11 questions about the socio-demographic features of the participants, such as age, gender, marital status, education level, social security, and income status (sufficient-not sufficient). In addition, the questionnaire contained informative data about physical disability, smoking, medications, prostheses, and diagnosed chronic disease.

### World Health Organization QOL Scale WHOQOL-OLD Module

The WHOQOL-OLD was developed for use in epidemiological research and clinical intervention studies for the elderly. A Turkish validity and reliability study using WHOQOL-OLD was conducted by Eser et al. (10). Cronbach alpha values were 0.88 for sensory abilities, 0.68 for autonomy, 0.73 for past, present, and future activities, 0.76 for social participation, 0.75 for death and dying, and 0.82 for intimacy. The WHOQOL-OLD module consists of 24 5-point Likert scaled items assigned to six factors:

1. Sensory abilities (1<sup>st</sup>, 2<sup>nd</sup>, and 20<sup>th</sup> questions).
2. Autonomy (3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup>, and 11<sup>th</sup> questions).
3. Past, present, and future activities (12<sup>th</sup>, 13<sup>th</sup>, 15<sup>th</sup>, and 19<sup>th</sup> questions).
4. Social participation (14<sup>th</sup>, 16<sup>th</sup>, 17<sup>th</sup>, and 18<sup>th</sup> questions).
5. Death and dying (6<sup>th</sup>, 7<sup>th</sup>, 8<sup>th</sup>, and 9<sup>th</sup> questions).
6. Intimacy (21<sup>st</sup>, 22<sup>nd</sup>, 23<sup>rd</sup>, and 24<sup>th</sup> questions).

The possible WHOQOL-OLD subscale scores were in the range of 4 to 20. By combining the individual scores, a total score was derived. As the score increased, the QOL also improved.

### MSPSS

The MSPSS was developed by Zimet et al. The validity and reliability of the scale in Turkey were assessed and its structural validity was evaluated by Eker and Arkar (11). In 2001, the factor structure, validity, and reliability of the reviewed form of multidimensional scale of social support was evaluated by Eker et al. (12). The internal consistency of the MSPSS and subscale scores was acceptable (Cronbach alpha coefficients = 0.80-0.95) (12).

The scale subjectively assesses the efficiency of the social support received from three sources and includes 12 items. There are three groups related to the support sources, each consisting of four things. The three groups are:

1. Family (3<sup>rd</sup>, 4<sup>th</sup>, 8<sup>th</sup>, and 11<sup>th</sup> items).
2. Friends (6<sup>th</sup>, 7<sup>th</sup>, 9<sup>th</sup>, and 12<sup>th</sup> items).
3. A special person (1<sup>st</sup>, 2<sup>nd</sup>, 5<sup>th</sup>, and 10<sup>th</sup> items).

The scale is a 7-point Likert type, and the choices included entirely agree (7 points), mostly agree (6 points), agree (5 points), undecided (4 points), disagree (3 points), mostly disagree (2 points), and entirely disagree (1 point). Each subscale score was obtained by adding the points of the four items; the total score was obtained by adding all the subscale scores. The lowest score obtained from the subscales was 4, and the highest possible score was 28. The lowest possible score from the entire scale was 12, and the highest possible score was 84. The higher the score, the higher the perceived level of social support (11).

### PPES

The PPES was developed by Small (2012) to reveal the patient empowerment level. The scale had 37 items under five subscales consistent with the Turkish validity and reliability analysis by Kaya and Işık (13). As a result of the analysis performed for the internal consistency of the overall scale and subscales of the Patient empowerment scale, the Cronbach alpha reliability coefficient of the broad scale was found to be 0.920. The scores

in the subscales of the MSPSS were 0.837 for identity, 0.746 for personal control, 0.764 for decision-making, 0.771 for knowledge and understanding, and 0.600 for enabling others. The scale is in 5-point Likert type, and the choices were strongly agree (5 points), agree (4 points), neutral (3 points), disagree (2 points), and strongly disagree (1 point).

**Statistics**

The results obtained from the research were presented by using descriptive criteria. Ordinal logistic regression was performed in the univariate and multivariate analysis of the factors affecting QOL. A multivariate regression analysis was conducted by creating three different models. In the first model, only the subscales of the MSPSS were analyzed. In the second model, the MSPSS and social support scale's total score was included in the analyses. In the third model, the subscales of the MSPSS, social support scale total score, and the variables found statistically significant in the univariate analysis were included. The results were presented as an odds ratio and a 95% confidence interval (CI). The purpose of applying three different multivariate analyzes is to better understand the effects of both sub-dimensions and total scores of the PPES and MSPSS scales on QOL. While revealing the effect of PPES on QOL, the effect of MSPSS was also evaluated together. In structural equation modeling analysis, the effect of MSPSS scale and PPES total scores on QOL was tested with path analysis. The direct, indirect (through PPES) and total effects of MSPSS on QOL are shown as standardized beta values. In addition, the Sobel test was used to test the mediating effect of patient empowerment (14). The direct and indirect effect values of the results obtained are depicted on a diagram.

**Ethics Committee Approval**

Approval of the study was obtained from the Kayseri University Ethics Committee (dated: 28.06.2019 and number: 15) and the Kayseri Provincial Directory of Health (dated 8.8.2019 dated and number 25655344/703.01). Finally, informed consent was obtained from the participants.

**Results**

Approximately 52.1% of the individuals included in the research group were females, 72.8% of whom were married. Of the total participants, 71.0% were in the age group of ≤74, with an average age of ± standard deviation 71.9±5.8; 57.7% of the patients were literate primary school graduates, 70.3% of whom had adequate income to cover their expenses.

The study found that 12.6% of the patients had physical disabilities, 8.2% used a prosthesis, 85.9% had chronic diseases, and 85.4% used medication regularly. In addition, 16.9% of the patients smoked, and 55.4% had never smoked (Table 1).

Based on the univariate analysis of the factors affecting the elderly, education, income, smoking, and chronic disease were significantly related to the QOL. In addition, patient empowerment subscales, social support subscales, and the total score indicated significant effects.

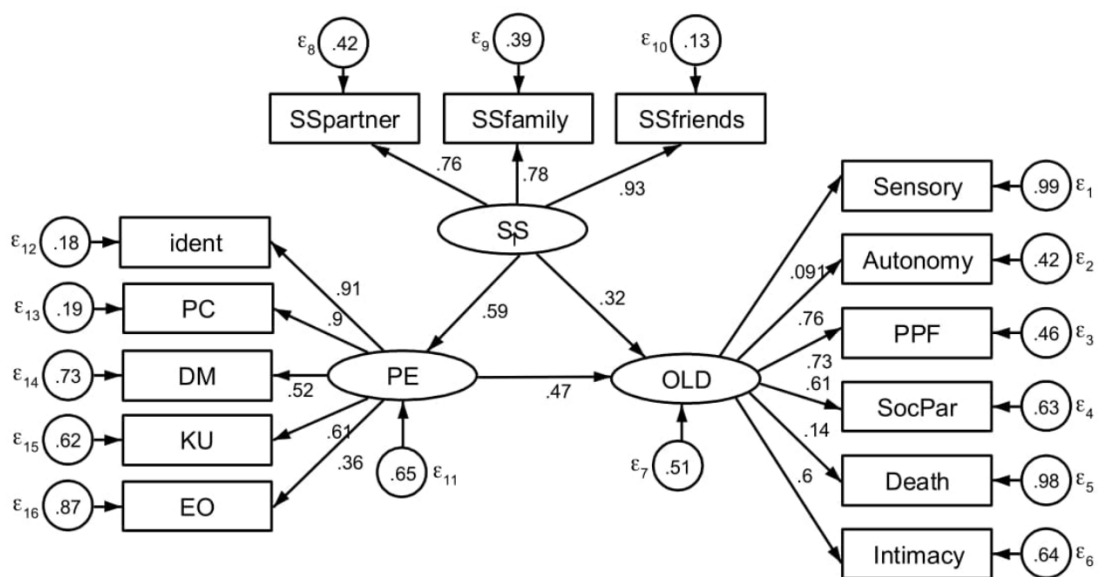
In the first of the multivariate analysis models created, patient empowerment subscales were analyzed together. Based on the results obtained, the subscales of identity, knowledge, and understanding, and enabling others had a significant effect

**Table 1. The distribution of the individuals in the research group in terms of demographic-socio-cultural characteristics**

Variables	Number	%
<b>Gender</b>		
Male	187	47.9
Female	203	52.1
<b>Marital status</b>		
Married	284	72.8
Not married	106	27.2
<b>Age group</b>		
≤74	277	71.0
≥75	113	29.0
Age X ± standard deviation	71.9±5.8	
Age median (min-max)	70.0 (65-98)	
<b>Education status</b>		
Illiterate	90	23.1
Literate and primary school	225	57.7
Secondary school and ↑	75	19.2
<b>Income status</b>		
Sufficient	274	70.3
Not sufficient	116	29.7
<b>Physical disability</b>		
Yes	49	12.6
No	341	87.4
<b>Prosthesis use</b>		
Yes	32	8,2
No	358	91.8
<b>Chronic disease</b>		
No	55	14.1
Yes	335	85.9
<b>Medication used constantly</b>		
Yes	333	85.4
No	57	14.6
<b>Smoking</b>		
Still smoking	66	16.9
Never smoked	216	55.4
Sometimes	33	8.5
Quitted	75	19.2

Variables	Model 1		Model 2	
	Approx OR (95% CI)	Adj, OR (95% CI)	Adj, OR (95% CI)	
Gender (female)	1.10 (0.78-1.55)	-	-	ni
Age (between 65-74)	1.22 (0.83-1.78)	-	-	ni
Marital status (married)	1.27 (0.87-1.86)	-	-	ni
Education status (illiterate)	Ref	-	-	Ref
(literate-primary school)	1.97 (1.29-3.01)**	-	-	1.11 (0.63-1.96)
(secondary school and above)	1.86 (1.09-3.19)*	-	-	1.44 (0.89-2.32)
Income status (sufficient)	2.67 (1.81-3.93)***	-	-	1.6 (1.06-2.41)*
Smoking (yes)	Ref	-	-	Ref
(never smoked)	2.55 (1.66-3.92)***	-	-	2.1 (1.37-3.21)**
(quitted)	2.31 (1.35-3.95)**	-	-	2.16 (1.25-3.73)**
Chronic disease (no)	2.87 (1.71-4.81)***	-	-	2.8 (1.67-4.71)***
Identity	2.66 (2.14-3.32)***	1.94 (1.35-2.81)***	1.56 (1.07-2.29)*	1.35 (0.91-2.01)
Personal control	2.47 (2.00-3.04)***	1.26 (0.88-1.8)	1.2 (0.83-1.73)	1.26 (0.86-1.83)
Decision making	1.51 (1.24-1.85)***	0.83 (0.64-1.08)	0.78 (0.59-1.02)	0.83 (0.63-1.08)
Knowledge and understanding	1.99 (1.61-2.45)***	1.38 (1.04-1.83)*	1.34 (1-1.78)*	1.36 (1.02-1.82)*
Enabling others	1.59 (1.33-1.91)***	1.26 (1.05-1.52)*	1.27 (1.05-1.53)*	1.2 (1-1.46)
SDO (special person)	1.07 (1.05-1.10)***	-	-	-
SDO (family)	1.15 (1.12-1.19)***	-	-	-
SDO (friend)	1.10 (1.07-1.13)***	-	-	-
SDO (total score)	1.04 (1.03-1.05)***	-	1.03 (1.02-1.04)***	1.03 (1.02-1.04)***

\*p<0.05, \*\*p<0.01, \*\*\*p<0.001. ni: Not included in the model, CI: Confidence interval, OR: Odds ratio  
 Model 1: Patient empowerment subscales were included in the analysis.  
 Model 2: Patient empowerment subscales and social support scale total score were included in the analysis.  
 Model 3: Patient empowerment subscales, social support scale total score and significant variables obtained from the univariate analysis were included in the analysis



**Figure 1.** The effect of patient empowerment subscales and social support scale on the quality of life  
 PPES: Patient perception of empowerment scale, MSPSS: Multidimensional scale of perceived social support, WHOQOL OLD: World Health Organization quality of life scale, KU: Knowledge and understanding, DM: Decision making, EO: Enabling others, PC: Personal control

on QOL. A one-unit increase in the patient empowerment subscales significantly improved QOL 1.94 (95% CI 1.35-2.81) times in identity subscale, 1.38 (95% CI 1.04-1.83) times in knowledge and understanding subscale, and 1.26 (95% CI 1.05-1.52) times in enabling others subscale. It was determined that social support, included in Model 2, also improved the QOL 1.03 (95% CI 1.02-1.04) times and patient empowerment subscales. The third model observed that income, rather than smoking or chronic disease, significantly affected QOL (Table 2).

When the effect of the MSPSS on the QOL was evaluated, both patient empowerment and social support affected QOL. When the standardized coefficient values were analyzed, patient empowerment affected QOL at the level of 0.47, and social support was 0.32. In addition, the indirect effect of the standardized coefficient of the social support on QOL in terms of patient empowerment was 0.27. The model observed that patient empowerment had a total impact on the QOL with a standardized coefficient of 0.47 and social support of 0.59. The RMSEA value of this created measurement model was 0.12, CFI = 0.83, with an SRMR value of 0.08.

The results obtained from the model revealed that patient empowerment created a significant and efficient structure for the elderly's QOL. The findings showed the critical and powerful effects of patient empowerment on the QOL of the elderly with social support. Patient empowerment in the elderly is an essential determinant of QOL (Figure 1). On the other hand, the indirect effect of social support on QOL through patient empowerment was analyzed with the Sobel test. It was found that the effect of social support on QOL through patient empowerment was not significant (Sobel test: 1.57;  $p > 0.05$ ). In other words, both patient empowerment and social support have independent effects on patients' QOL.

## Discussion

Using the univariate analysis of the factors affecting the elderly, this study found that education, income, smoking, and chronic disease significantly affected QOL. The last model found that sufficient income, rather than smoking or chronic illness, significantly affected QOL.

In the elderly, social, economic, and physical factors are important variables affecting QOL (15). Previous studies found that income level and QOL are related (16,17). The positive effect of economic well-being on QOL consists of meeting basic needs and bringing positive results such as stronger social relations, increased self-confidence, and more care for the environment. Although the income levels of the elderly decrease compared to the active employment period, handicaps such as increased health expenditures and personal financial situation become even more critical in maintaining QOL. Many studies observed

a negative relationship between chronic disease and QOL in the elderly (17-19). Factors such as acute or chronic conditions are likely to occur with advanced age and associated physical deficiencies. In addition, the reduced level of social interaction can lead to social withdrawal, negatively affecting QOL in the elderly. Symptoms of deprivation and the fear of death, and the loss of those of the same age also negatively affect QOL. Being away from an active work life due to retirement or being unwanted are additional factors that negatively affect QOL.

Our study determined that the smoking behavior of the elderly is one of the factors that negatively affect the QOL. Studies are revealing a negative relation between smoking and QOL (18,19). Smoking is a behavior that many people with personal challenges prefer and may lead to a low QOL. The physical and mental effects of smoking can also negatively affect QOL. A mutual cause-effect relationship between smoking behavior and low QOL has been widely documented. While poor QOL increases the tendency to smoke, smoking directly or indirectly (causing various health problems, exclusion in interpersonal relationships, financial loss, etc.) has a negative effect on QOL.

In this study, one of the factors that positively affected the QOL of the elderly was education. As education status decreases, the QOL also decreases. In many similar studies, a relation between education level and the QOL of the elderly was demonstrated, including the link between a low educational level and poor QOL (16,20). It is possible to explain this result in several aspects. It is common for economic status to be relatively better with an increased education level. A prosperous financial position will affect the QOL positively. A high level of education will positively affect QOL because it increases the capacity of individuals to be self-sufficient, organize interpersonal relations better, and acquire a variety of interests that will influence their life. In other words, it will broaden their horizons.

This study revealed that both patient empowerment and social support positively affect QOL. As with this study, some studies were conducted on a variety of patient groups. It was reported that patient empowerment increased QOL (21,22). In a study analyzing the effect of training based on the family-oriented empowerment model on the QOL of the elderly with chronic obstructive pulmonary disease (COPD), the study found that family-oriented empowerment programs increased the QOL of the elderly with COPD (23).

Some studies reported that social support affects the QOL of the elderly; this is a predictable result (24-26). A study by Say Şahin et al. (25) it was reported that there was a moderate positive correlation between social support scale, and that as the social support increases the satisfaction with life also increases. Boylu and Gunay (26) found that the perceived level of social support was a significant predictor of QOL.

Old age and disease are factors negatively affecting QOL. Individually, these conditions can magnify a poor QOL. In such a situation, social support and patient empowerment approaches will significantly contribute to these individuals. Implementing social support and patient empowerment programs in elderly patients will increase their sense of self-confidence and form the basis for an improved QOL. Further, such support will break the vicious circle of the restrictions due to disease, increase self-confidence, and strengthen social relations.

### Study Limitations

One of the goals of this study was to create a model using multivariate analysis to test the social support and patient empowerment systems. Cause and effect relationships were investigated as a whole. In addition, the WHOQOL-OLD, MSPSS were used to evaluate QOL. The MSPSS and PPES are valid and reliable tools in Turkey.

One limitation of the study was that although the sample selection was performed by simple random sampling, the research method was based on cross-sectional data collection. This approach required that future studies be longitudinal to reveal cause and effect relationships more clearly.

### Conclusion

This study concluded that increased income, smoking cessation, and successful treatment of chronic disease significantly affected the QOL of the elderly. The modeling results also revealed that social support and patient empowerment had a significant effect on the QOL of the elderly.

Perceived social support systems and patient empowerment in the elderly are among the most critical determinants of QOL. Based on these results, there is a tendency toward reduced QOL due to many negative factors (e.g., physical health, feelings of inadequacy, and social support deficiency) in the elderly. In such conditions, the importance of social support and patient empowerment practices becomes more evident as the means to increase the QOL.

There are some limitations as the study was conducted in Kayseri province and on individuals over 65 years of age. In this study, the "income status" of the participants was qualitatively classified as "sufficient-not sufficient". In studies to be conducted in this area, it is thought that the quantitative determination of the "income status" of the participants will strengthen the research results and attract the attention of researchers related to the subject in this direction.

### Ethics

**Ethics Committee Approval:** Approval of the study was obtained from the Kayseri University Ethics Committee (dated:

28.06.2019 and number: 15) and the Kayseri Provincial Directory of Health (dated 8.8.2019 dated and number 25655344/703.01).

**Informed Consent:** Informed consent was obtained from the participants.

**Peer-review:** Externally peer-reviewed.

### Authorship Contributions

Concept: D.Ü., E.N.Y., H.B., F.A., Design: D.Ü., E.N.Y., H.B., F.A., Data Collection or Processing: E.N.Y., F.A., Analysis or Interpretation: D.Ü., H.B., Literature Search: D.Ü., E.N.Y., F.A., Writing: D.Ü., E.N.Y., H.B., F.A.

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