

The Effect of Chronic Kidney Disease Treatment on The Quality of Life Assessed by Using SF-36 in Turkey: A Systematic Review

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ABSTRACT

Objective: Quality of life assessment of chronic kidney patients is becoming increasingly common in both research and clinical practice. One of the most commonly used tools for quality of life measurement is the SF-36. The aim of the study is to make a systematic analysis of researches on adult patients receiving hemodialysis treatment and measures the quality of life using the SF-36 in Turkey.

Materials and Methods: Researches in the literature on quality of life were determined by using data sources. The studies that did not meet the criteria determined within the scope of the study were eliminated and in total 28 studies conducted between 2013-2019 including 3028 patient samples were reached.

Results: The mean age of the samples was 53.06(±5.62) years; the mean duration of hemodialysis treatment was 4.97 years and the mean of female patients was 44.64%. Researches were mostly applied in Marmara Region. 40% of the studies examined the effects of anxiety and depression and 11% of the studies examined the effects of self-care and coping skills on quality of life. When the means of the SF-36 were examined, it was found that the lowest subdimension averages were "Role Physical" and "General Health". In addition, the patients' physical quality of life was found to be less than the mental dimension.

Conclusion: In general, when the findings are evaluated, it is seen that chronic kidney patients have a greatly decreased quality of life. With this research findings, a general view has been put forward. Thus, it is thought that it will guide researchers about chronic kidney disease management.

Keywords: Quality of Life; Chronic Kidney Disease; Systematic Review; Turkey

Kronik Böbrek Hastalığı Tedavisinin Türkiye'de SF-36 Kullanılarak Değerlendirilen Yaşam Kalitesi Üzerine Etkisi: Sistemik İnceleme

ÖZET

Amaç: Kronik böbrek hastalarının yaşam kalitesi değerlendirmesi hem araştırma hem de klinik uygulamada giderek yaygınlaşmaktadır. Yaşam kalitesi ölçümünde en sık kullanılan araçlardan biri 36 maddelik Kısa Form Yaşam Kalitesi'dir (SF-36). Bu çalışmanın amacı, Türkiye'de hemodiyaliz tedavisi alan yetişkin hastalar üzerinde yapılan ve Türkiye'de SF-36'yu kullanarak yaşam kalitesini ölçen araştırmaların sistematik bir analizini yapmaktır.

Gereç ve Yöntem: Literatürde yaşam kalitesi üzerine yapılan araştırmalar veri kaynakları kullanılarak belirlenmiştir. Araştırma kapsamında belirlenen kriterleri karşılamayan çalışmalar elenmiş, 2013-2019 yılları arasında yapılmış ve toplamda 3028 hasta örnekleme sahip 28 çalışmaya ulaşılmıştır.

Bulgular: Örneklem ortalama yaşı 53,06(±5,62); hemodiyaliz tedavisi aldıkları ortalama süre 4,97 yıl ve kadın hastaların ortalaması %44,64'dür. Araştırmalar daha çok Marmara Bölgesi'nde uygulanmıştır. Çalışmaların %40'ü anksiyete ve depresyonun, %11'i ise öz bakım ve baş etme becerilerinin yaşam kalitesi üzerindeki etkilerini incelemiştir. SF-36 ortalamaları incelendiğinde, en düşük ortalamanın "Fiziksel Rol" ve "Genel Sağlık" alt boyutları olduğu bulunmuştur. Ayrıca hastaların fiziksel yaşam kalitesi boyutu, zihinsel yaşam kalitesi boyutundan daha az bulunmuştur.

Sonuç: Genel olarak bulgular değerlendirildiğinde kronik böbrek hastalarında yaşam kalitesinin önemli ölçüde azaldığı görülmektedir. Bu araştırmanın bulgularına genel bir bakış getirilmiştir. Bu nedenle araştırmacılara kronik böbrek hastalığı yönetimi konusunda rehberlik edeceği düşünülmektedir.

Anahtar Kelimeler: Yaşam Kalitesi; Kronik Böbrek Hastalığı; Sistemik İnceleme; Türkiye

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Chronic diseases are increasing gradually around the World and put burden on patients, service providers and health system. According to the National Turkey Burden of Disease Study (2013), the rate of life-adjusted years of chronic diseases (DALY) constitutes 81% of the total disease burden (1). The World Health Organization (WHO) stressed that chronic diseases kill 40 million people each year, which is equivalent to 70% of all deaths (2). Chronic diseases are a global public health problem, both with high mortality and increased health spending.

Chronic kidney disease is also caused by different chronic diseases and irreversibly changes the structure of renal function (3). Chronic kidney disease is a global health problem with its increasing incidence (4) and it is the twelfth most common cause of death (5) and is associated with increasing global health problems such as diabetes and hypertension (6). Treatment methods such as dialysis and renal transplantation make kidney disease one of the most costly diseases with increasing costs. All these results show that chronic kidney disease puts great burden on patients and health systems. Effective management of the disease to minimize this burden is only possible by establishing a disease management model that will improve health outcomes (6). In this sense, measuring health outcomes is very important.

Quality of life comes to the forefront as one of the most frequently used methods in evaluating health outcomes (7). It is important to evaluate the quality of life, to document the burden of chronic diseases, to monitor changes in health over time, to evaluate the effects of treatments and to measure the return on health investments (8, 9). Patients with chronic kidney disease spend the majority of their lives on dialysis treatment, the effects of symptoms such as fatigue and fatigue after dialysis treatment, their dependence on their relatives, may cause poor physical and mental quality of life (10, 11).

Quality of life assessment of chronic kidney patients is becoming increasingly common in both research and clinical practice. One of the most commonly used tools for quality of life measurement is the 36-item Short Form Quality of Life (SF-36). This scale is frequently used to provide summary information for the health outcomes of chronic patients, so this is the reason why this scale is handled within the scope of this research. This scale has two dimensions: physical and mental quality of life. These dimensions have 4 sub-dimensions in themselves and there are 8

sub-dimensions in total. "Physical function, role physical, pain and general health" are the sub-dimensions of physical quality of life dimension. "Vitality, social function, role emotional and mental health" are the sub-dimensions of mental quality of life dimension (12).

The aim of this study was to review the findings of the study aiming to determine the quality of life of patients with chronic kidney disease and receiving hemodialysis treatment and to present a general view on the quality of life of the patients. For this purpose, it was aimed to summarize the quality of life scores of the quality of life studies measured using the SF-36 scale in the sample of chronic kidney patients, to see the distribution of the studies over the years, to reveal their relationships with other variables, and to determine the common direction and basic tendencies of these studies and to make a systematic review. On the other hand, it is thought to be important in terms of guiding the researchers who want to contribute to this field.

MATERIAL AND METHODS

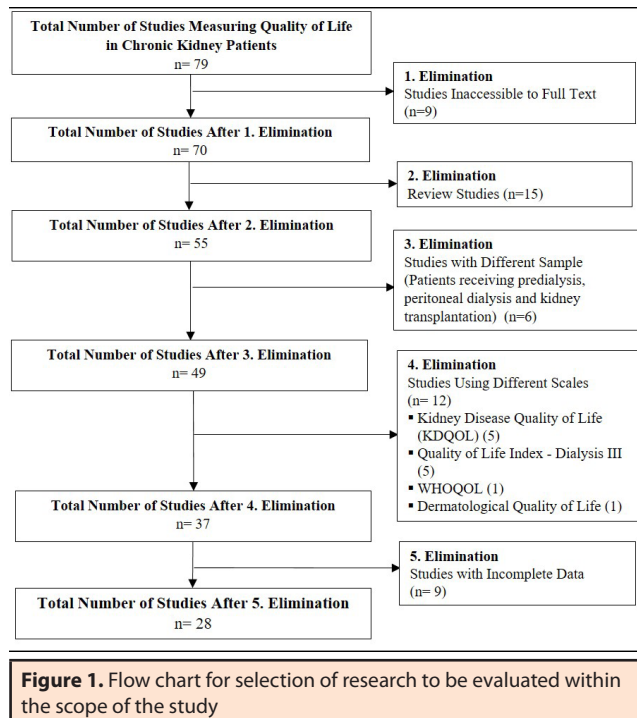
The aim of the study is to make a systematic analysis of researches on adult patients with chronic kidney disease, receiving hemodialysis treatment and measures the quality of life using the SF-36 in Turkey. Within the scope of the study, firstly the researches in the literature about quality of life were determined by using appropriate data sources. Google academic, PubMed, Ebscohost, ISI Web of Knowledge, ProQuest, Science Direct, Scopus electronic databases were scanned. Scanning is performed using "quality of life", "SF-36", "chronic kidney disease" and "hemodialysis" keywords.

Eliminations were made according to the criteria determined by the researcher. Studies that meet the following criteria are included in this research:

1. Studies have been made in Turkey
2. Performed in a sample of patients with chronic kidney disease and receiving hemodialysis treatment
3. Quality of life was assessed using the SF-36 scale
4. All take place as the mean and standard deviation for the 8 dimensions of the SF-36 scale study

In line with the above criteria, compiled studies without research, studies that measure the quality of life with

other measurement instruments other than SF-36, studies that did not include sufficient information about scale dimensions were excluded from the scope of this study. The flow chart for the selection of the researches is summarized in Figure 1.



A total of 79 studies measuring the quality of life of chronic kidney patients were reached after screening from the databases. The full text of 9 of these studies could not be reached. 15 of the studies are review article, 12 of them used scales other than SF-36 and there is a lack of data in 9 of them. 6 of them in the sample group, hemodialysis patients were not included. After the studies that did not meet the criteria were excluded, 28 studies were reached conducted between 2013-2019 and these studies constituted the sample of this study. The 28 studies included in the study have a total of 3028 patient samples.

Studies within the scope of the research; type of publication, year of publication, number of samples, mean age of patients in the sample group, duration of dialysis, gender, type of health institution where researches were applied, regions and variables examined with quality of life were investigated. In addition, subscales of the SF-36 “physical function, role physical, pain, general health, energy, social function, role emotional and mental health” dimensions of the average and confidence intervals distributions

were given to provide an overview of the quality of life of chronic kidney patients.

RESULTS

When the publication types of the 28 studies included in the research were examined, it was determined that 39.3% of the studies were master’s thesis, 28.6% were articles, 21.4% were specialized in medicine and 10.7% were doctoral dissertations. Figure 2 shows the distribution of the researches by years within the scope of the study. When the distribution of the studies by years is examined, it is seen that they were published between 2003 and 2019. About half of the researches were published in 2015 and beyond.

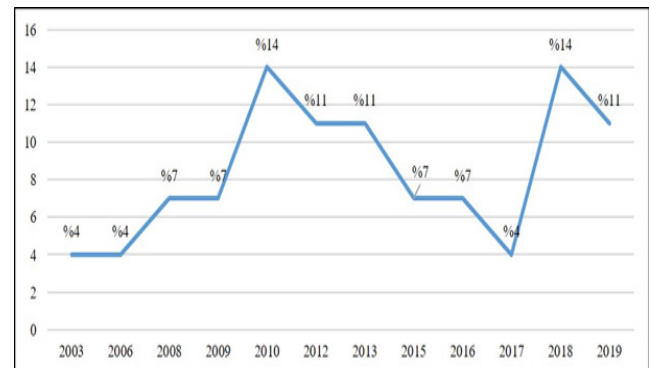


Figure 2. Distribution of studies by years (%)

Table 1 summarizes the information about the researches covered in the study. When the sample numbers of the researches are examined, it is seen that the number of samples varies between 30 and 446 and the average number of samples is 108.14. The mean age of the samples was 53.06(±5.62). The mean duration of hemodialysis treatment was 4.97(±1.37) years. When the gender distributions of the sample were examined, it was found that at least 34% of the patients and at most 57,50% of the patients were women. The average of female patients was 64%.

When the type of health institutions where the researches were applied was examined, it was found that the researches were mostly applied in university hospitals and private dialysis centers. When the geographical regions where the researches are applied are examined, it is seen that the Marmara region is in the first place. (42.86%). This situation shows that almost half of the researches took place in the Marmara Region sample. Istanbul is the city where most of the research done in the Marmara Region.

Table 1. Information about the researches in the study				
	Mean	Sd.	Min.	Max.
Sample size	108.14	84.72	30.00	446.00
Mean age	53.06	5.62	41.01	64.30
Mean hemodialysis treatment duration (years)	4.97	1.37	2.40	8.20
Women (%)	44.64	7.25	34.00	57.50
	n		%	
Type of health institution where the research took place*				
Public hospital	8		23.53	
University hospital	12		35.29	
Free-standing dialysis center	12		35.29	
Private hospital	2		5.88	
Geographical Regions where the research took place				
Marmara Region	12		42.86	
Central Anatolia Region	5		17.86	
Black Sea Region	3		10.71	
Mediterranean Region	2		7.14	
Aegean Region	2		7.14	
Eastern Anatolia Region	2		7.14	
Southeastern Anatolia Region	1		3.57	
not mentioned	1		3.57	
Other variables examined with quality of life*				
Anxiety, Depression	18		40.00	
Self-Care Power, Coping Skills	5		11.11	
Nutritional Status	4		8.89	
Sleep Quality	4		8.89	
Training Provided by Health Personnel	4		8.89	
Other**	10		22.22	

* Percentages were calculated on the basis of column totals, since one study was conducted in more than one health institution and more than one variable was used in one study.
 ** Adherence to Treatment, Health Literacy, Care Burden, Sexual Function, Illness Perception, Life Satisfaction, Social Support, Pain, Psychological Endurance, Gastrointestinal Disorders

When the distribution of the variables discussed together with the quality of life were examined, 40% of the studies examined the effects of anxiety and depression, 11.1% of the patients' self-care power and coping skills on quality of life. Nutritional status of the patients, sleep quality and the effect of the education provided by the health personnel on the quality of life are the other studied topics.

Figure 3 shows the SF-36 quality of life dimensions' mean, minimum and maximum values and the prevalence of the means in the 95% confidence interval. When the average distribution of the dimensions is examined, it is seen that the lowest average belongs to the dimensions of Role Physical (35.67±18.14) and General Health (38.03±8.81). The dimensions of Pain (57.01±14.50) and Social Function (55.17±14.75) were the highest average. In general, when the averages of all dimensions are evaluated, it can be said that chronic kidney patients have a greatly reduced quality of life.

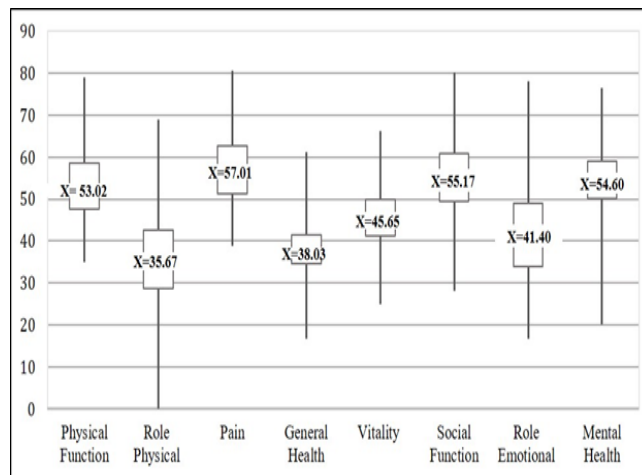


Figure 3. Mean distribution of SF-36 quality of life subscales

On the other hand, when the distribution ranges of the averages are examined; The difference between minimum and maximum mean values of physical role, emotional role difficulty and mental health dimensions is high. The wide distribution range of these dimensions shows that the distribution is heterogeneous. That is to say, there are large differences between the results of research on these dimensions.

Figure 4 shows the average distribution of SF-36 physical and mental quality of life dimensions of the 28 studies in the study. When both distributions are examined, it is seen that they take values between 25 and 70 average. The mean of Physical Quality of Life dimension was found to be $45.89(\pm 11.41)$ and the average of Mental Quality of Life dimension was $49.20(\pm 10.73)$. The average physical quality of life of patients was found to be less than the mental quality of life in almost all studies.

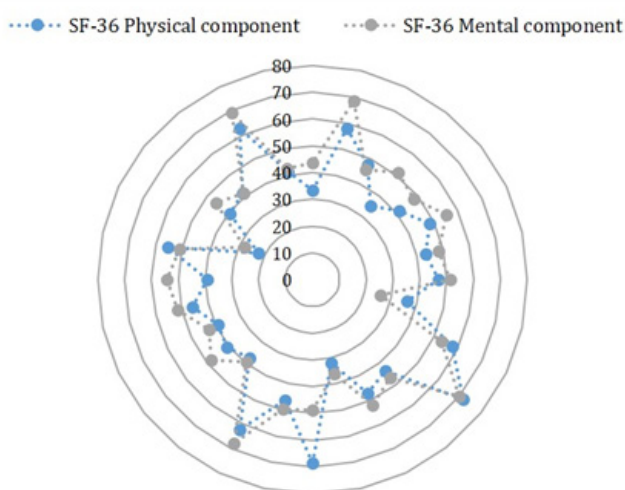


Figure 4. Mean distribution of sf-36 physical and mental quality of life dimensions

DISCUSSION

Improving the quality of life of patients with chronic diseases is one of the main goals of health care. Evaluation of quality of life allows to determine the burden of the disease on the patient, the effect on the patient's life and patient satisfaction. By compiling the results of the studies investigating the quality of life of patients with chronic kidney disease in Turkey, intended to reveal general view of patients' quality of life and basic trends.

As a result of the study, when the gender distribution average of the studies was examined, it was seen that $44.64\%(\pm 7.25)$ of the patients were female. Similar to this research, Nişel et al. (2016) conducted a comparative analysis about patients receiving dialysis treatment in Europe, Japan, America and Turkey by country. They were determined that 57.9% of patients in European countries, 62.6% of patients in Japan, 52.8% of patients in the United States and 55.1% of patients in Turkey were male. The mean age of the patients included in the study sample was found to be 53.06 (13). Department of Health Technology Assessment (2017) report on the work they have done throughout Turkey, the average age of patients with chronic kidney was calculated as 52.28 ± 16.74 (14). Ricardo et al. (2013), in their study, the average age of patients receiving dialysis treatment is 57.00 ± 11.06 (15). The average age of patients in the study of Chow and Tam (2014) is 58.21 ± 15.22 (16). This may be due to the prevalence of chronic kidney disease in middle-aged and older patients.

In the samples of the studies, patients' mean duration of hemodialysis treatment was found to be $4.97(\pm 1.37)$. Kim et al. (2013) found that 30% of the patients in their study received dialysis treatment for more than 5 years (17). Nişel et al. (2016) conducted a comparative analysis of patients receiving dialysis treatment by country. Approximately 45% of Turkish patients, 40% of patients in Japan, 24.1% of patients in Europe and 12.1% of patients in America have been on hemodialysis treatment for more than 7 years (13).

When the average distributions of SF-36 quality of life dimensions of the studies were examined, it was found that the average physical quality of life of the patients was less than the mental quality of life. In addition, the lowest mean of the sub-dimension was found to be Role Physical (35.67 ± 18.14) and General Health (38.03 ± 8.81). Wyld et al. (2019) found that the physical quality of life score of the patients was lower than the mental quality of life as a result of their research with the data of 1112 chronic kidney patients in Australia (18). Martini et al. (2018), in their study with patients receiving dialysis treatment, stated that the lowest subdimension average was General Health (51.6 ± 13.9) (19). In their study with 256 chronic kidney patients, Kefale et al. (2019) found that the lowest subdimension means were Role Physical (44.3 ± 41.9) and Pain (49.3 ± 26.2) (20). Soni et al. (2010) compared patients with different stages of chronic kidney disease and concluded that Role Physical and General Health were the lowest subdimensions in all stages (21). In general, when the findings are evaluated, it can be said that chronic kidney patients have a greatly decreased quality of life. Determining the quality of life levels of patients and determining the factors that affect this level are important for disease management.

When the distribution of the variables discussed together with the quality of life were examined, 40% of the studies examined the effects of anxiety and depression, 11.11% of the patients' self-care power and coping skills on quality of life. In future studies, it may be suggested to plan studies with variables such as relations with physicians, nurses and other dialysis personnel, satisfaction level from the institution, patients' knowledge about disease and treatment, compliance with treatment, health belief level and health literacy.

CONCLUSION

Improving the health outcomes of chronic kidney disease requires management of the disease with a multidimensional approach. Achieving all targets with the potential for improvement in understanding, measuring, preventing and treating disease; contribute to reducing the burden of disease in future generations. In this way, it will be possible to maximize the health and welfare of patients while ensuring the best use of limited resources. The most important steps in this process are identifying the current situation about the magnitude of the disease, identifying the opportunities that may improve the current situation and the risk factors that may affect it, applying preventive strategies and planning the resources correctly. Within the scope of this research, a general evaluation of the health outcomes of chronic kidney patients was made and it was aimed to direct the future studies.

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