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Investigating the relationship between illness perception and quality of life in hemodialysis patients

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ABSTRACT

Aims: According to the nature of their illness, dialysis patients should have a clear perception of it. Nurses can influence patients' quality of life through perception-basedinterferences. The present study seeks to determine the relationship between illness perception and quality of life. Additionally, it tries to find out predictive variables of quality of life based on illness perception dimensions.

Methods: 120 dialysis patients participated in this descriptive-correlation study in 2010-2011. The patients were admitted in Taleghani Hospital of Urmia.The required data was collected by the use of a demographic data questionnaire, abriefillness perception questionnaire (IPQ-B), andstandardquality of life questionnaire (SF-12).The data was analyzed using Pearson correlation test and stepwise regression analysis.

Results: There was an inverse correlation between parameters of consequences, nature of illness, anxiety, emotional response and quality of life ($p<0.05$). Stepwise regression analysis showed that parameters of consequences, nature of illness and emotional response significantly participated in determining the quality of life variance.

Conclusion: Based on the achieved results of the present study, nurses can improve the quality of life inhemodialysispatients through presenting proper training and consulting courses to patients and their families about treating options and nature of illnesses and also by having them participate in health improvement programs.

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1. Introduction

In the recent two decades, despite the improvement of medical sciences and changes in disease patterns in different countries, we are dealing with the spread of chronic illnesses, specifically renal diseases [1]. End-stage renal disease (ESRD) patients go under dialysis for

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treatment. Dialysis is an artificial method of filtering the blood and in cases thatkidney transplant is not available, itis considered as a necessary treatment for ESRD patients [2].In ESRD, kidney loses 10 to 15 percent of its functioning [3]. Annually, more than 60000 patients die of kidney diseases all over the world [4]. Based on the report of "Association of Supporting Patients with Renal Disease", from among 40000 patients with renal disease, 15000 ones are on dialysis, and 500 of which die due to complications of the disease in Iran [5].

Studies indicate that dialysis disrupts all aspects of a normal life and creates many restrictions for patient [6].Althoughin the past the consequences of treating ESRD patients were reported based on laboratory criteria such as urea-creatinine and survival treatmenttechniques,in recent years attention to health based on quality of life in ESRD patients has increased[7]. Quality of life includes different aspects of health in addition tophysical, mental, and social comfort of the individual's life and it is under the influence of individuals' experiences and perception of life [8, 9]. Feeling unable, not having control over disease and treatment, tolerating mandatory treatments, being limited because of restricted remedial diets, changes in self-image, financial problems, inability to maintain a job, and sexual problems are among the common stressful factors in dialysis patients which negatively impact theirqualityof life [10]. Therefore, one of thechallengesof today's medical science is trying to improve the quality of life in these patients.

When people are faced with a chronic illness, their cognitive structure undergoes some changes in terms of psychological and knowledge aspects. Internal and external variables such as personality factors, social environment and demographic factors contribute in its formation. These factors with the threat of the disease affect patient's understanding of the nature, causes, state of being treatable and controllable, and disease consequences [11]. Therefore, a person who positively perceives the disease can correctly and realistically perceive and analyze other symptoms and aspects of the disease. One of the widespread compatibility models about illness perception which is presented by Luntal et al. is Self Regulation Model [12, 13]. SRM suggests that behavioral patterns related to health are resulted from multidimensional and complicated perceptions of the disease. The results of Luntal et al.'s study show that quality of life is related to cognitive perception of the disease and treatment [14]. This model has been used in the studies on patients with chronic fatigue syndrome, MS, breast cancer, MI, and venous thrombosis [15]. It shows that when patients positively think that the disease can be controlled and treated, their health will also be positively affected [16].

Illness perception contains information in five dimensions: 1. Nature (disease symptoms such as fatigue and weakness) 2. Cause or individual's belief in the cause that has brought about the beginning of the disease 3.Duration of the disease or the individual's perception of the durationto be acute, chronic, or periodic 4.Patient' expected consequences and findings of the disease in terms of economic, social, psychological and physical effects 5. Effectiveness of control, treatment, and recovery[17].

Researchhas proved that identifying patients' ideas about the disease and treatment help understand disease compatibility reactions [15]. Therefore, assessing patients' perception of health and its relationship with quality of life will help the treatment personnel learn about patients' perception of health as well as their functioning ability and positive feeling so that they consider some treatment methods to improve patients' quality of life [18].

Sayin et al.'s study suggested that assessing the quality of life which is related to the illness perception helps programming treatment guidelines, determining efficacy of treatment interferences, and observational evaluation of treatment [19]. Due to the nature of the disease,

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dialysis patients need to correctly perceive the disease. Nurses can affect patients' quality of life through interferences based on illness perception. Accordingly, this study seeks to determine the relationship between illness perception and quality of life. Additionally, it tries to find out predictive variables of quality of life based on illness perception dimensions.

2. Methods

The present study is a descriptive-analytical-cross sectional one in which the patients with the following criteria were chosen as the study samples: The disease was to be surely diagnosedby the doctor, they had to undergo treatment for at least six months before the study, their age was to be between 18 and 65, they had to have no history of mental illness, and they had to voluntarily participate in the study. The population of the study was in ShahidTaleghani Hospital dialysis center inUrmia. Sequential convenience sampling was done and all the patients with proper criteria for participating in the study were chosen as samples (N = 120). Sampling was done during six months between September 2010and March 2011. To collect data, some questionnaires containing the following parts were used: A) Clinical and demographic information including variables such as age, gender, education, the disease which caused the kidney problem, and dialysis duration.

B) Standard quality of life questionnaire (SF-12), which includes 8 dimensions: physical functioning, role limitations due to emotional-mental problems, physical pain, vitality, stamina, mental status, social functioning, and general perception of health [19-20].

This questionnaire is a standard toolandits reliability is approved in both international studies [19-20] and internalones [21]. According to this questionnaire, the minimum and maximum possible score for each dimension of quality of life and total quality of life is between zero and one hundred points. The higher scorerepresentsthebetter quality of life [22].Its reliability was gained through Cronbach's alpha which was 0.77.

C) Briefillness perception questionnaire (IPQ-B) includes nine questions that assess the emotional and cognitive imagination of the disease. It respectively assesses consequences, duration, personal control, treatment control, nature, anxiety, illness recognition, and emotional responses. Each question investigates one of emotional and cognitive aspects of illness perception. Scores range from 1 to 10 in the first 8 questions, question 9is an open question, and asks about the main three causes of renal disease. Reliability of this questionnaire has previously approvedin the past studies [23]; however, in this study after translation, its form and content validity was approved by professors ofnursing group of the university. Its reliability was calculated through Cronbach's alpha,0.78, and performing test-retest method, the reliability proved to be 0.88.

The data wasanalyzed using the software SPSS version 14. To calculate the correlation between quality of life and illness perception dimensions, Pearson correlation method was used. To predict the quality of life via illness perception, stepwise multiple linear regression was utilized. The results were significantly interpreted lower than 0.05.

3. Results

From among the 120 participants, 64 (54.2%) were male. The mean of participants' age was 54.47 with the standard deviation of 11.43.The majority (43%) of the patients were illiterate. Dialysis duration was 2.57with the SD of 1.074 and hypertension was the most common (37%) cause of renal disease.

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Table 1: Demographic-clinical information of dialysis patients of Taleghani Hospital in Urmia, 2010-2011

Variable	Number	
Gender	Male	64 (54.2%)
Number (percent)	Female	54 (45.8%)
Education Number (percent)	Illiterate	51 (43.2%)
	Below diploma	42 (35.6%)
	Diploma	14 (11.9%)
	Above diploma	5 (4.2%)
	B.A. and higher	6 (5.1%)
Cause of renal disease (percent)	Diabetes	35%
	Hypertension	37%
	Renal problems (kidney stone, glomerulonephritis)	3%
	Others	25%
Dialysis duration (mean and SD)	2.57 (1.074)	
Age (mean and SD)	54.47 (11.43)	

There was a significant negative correlation between illness perception in the aspect ofconsequencesand quality of life ($p<0.01$), ($r=-0.47$). Patients,who had suffered more consequences from their illness, had lower quality of life. Also a significant negative correlation was found between illness perception in the aspect of nature of the disease and quality of life ($p<0.01$, $r=-0.38$). Patients who experienced additional symptoms of renal disease had lower quality of life. Moreover, a significant negative correlation between illness perception in the aspect of anxiety and quality of life ($p<0.01$, $r=-0.30$) was found. Patients, who were more concerned about their disease, had lowerquality of life. A negative relationship existed between quality of life and emotional responses ($p<0.01$, $r=-0.48$). Patients, whose disease had great influence on the emotional aspect of their life, reported lower quality of life. However, between quality of life and other aspects of illness perception including duration, self-control, treatment control, and recognizing the disease, no significant relationship was observed (Table 2).

The results of stepwise regression analysis showed that consequences determine 22 percent of quality of life variance. In the second model, the aspect of nature of disease entered the regression equation and with the previous model variable, they determined 22 percent of quality of life variance. In the third model, the emotional responseswith the two previous variables determined34 percent of their quality of life variance.

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Table 2: Results of Pearson correlation test between quality of life and illness perception

variables	1	2	3	4	5	6	7	8	9
Total scores of quality of life	1								
Consequences	-0.469**								
Duration	-0.113	0.136	1						
Self-control	0.071	-0.95	-0.295	1					
Treatment control	-0.47	0.84	0.195	0.152	1				
Nature of disease	-0.387**	0.274**	0.334	-0.247	0.203	1			
Anxiety	-0.301**	0.340**	0.046	-0.210	0.026	0.270	1		
Illness recognition	0.062	-0.059	-0.099	0.188	0.002	0.039	0.027	1	
Emotional responses	-0.488**	0.526**	0.098	0.015	-0.470	0.299	0.501	0.049	1

Table 3:Stepwise regression model for illness perception prediction based on quality of life

Stages	Variables	R	R^2	B	β	Standard deviation	F	Significance level
First stage	Consequences	0.469	0.220	-0.950	-0.469	0.166	✶32.660	0.000
Second stage	Consequences	0.540	0.292	-0.795	-0.392	0.165	✶23.714	0.000
	Nature of disease			-0.802	-0.280	0.234		0.001
Third stage	Consequences	0.590	0.348	-0.518	-0.256	0.182	✶20.310	0.005
	Nature of Disease			-0.665	-0.232	0.230		0.004
	Emotional responses			-0.593	-0.284	0.189		0.002

**p<0.01, *p<0.05
= Illness perception
Independent variable
✶=f<0.01

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4. Discussion

The results of the study showed that belief in the nature and serious consequences of the disease were correlated with negative emotional responses toward the disease. These results were similar to the results of the study done by Timmers et al. [3] and Hagger et al. [16] which showed the relationship between nature of the disease, consequences, and self-control and quality of life of the hemodialysis patients. This result may be due to the point that belief in nature and serious consequences of the disease has made patients feel the threat of the disease more which finally leads to a decrease in the quality of life of the hemodialysis patients. The results of other studies done on ESRD patients also suggest that nature of the disease and self-control have a positive relationship with quality of life of hemodialysis patients, and a negative correlation with consequences and emotional responses [25, 26, 27, 28].

The results also showed that illness perception in aspects of anxiety and emotional responses was correlated with quality of life in hemodialysis patients. This result is consistent with the results of Longe and Piette [24].In the mentioned study, patients with positive illness perception experienced a better quality of life after heart attack. They were readier to be discharged, had less angina pain, and came back to work sooner. This may suggest that being anxious about the disease, patients regard the symptoms of their disease more significantly and pessimistically evaluate their health which finally leads to a decrease in their quality of life.

Also, multivariate regression analysis showed thatconsequences, nature, and emotional responses were predictive variables of quality of life in hemodialysis patients. Therefore, patients with the worst consequencesof the disease who had experienced more symptoms of the renal disease had lower quality of life. In addition, patients whose emotional responses in life were moreinfluencedby the disease had lower quality of life.

In the study done by Covic et al., nature, self-control, and emotional responseswere strong predictive variables of quality of life in ESRD patients [25]. The results of other studies also proved that in the chronic fatigue syndrome diseases [29-30], Addison's disease [31], and multiple sclerosis [32], emotional responses and self-control were strong predictive variables in quality of life. This was consistent with the results of emotional responses and nature aspects in our study.

5. Conclusion

Previous studies have shown that compared to the general population, quality of life in dialysis patients, particularly in the areas of physical performance, is in a lowlevel.Therefore, not only these patients need improvement in the physical aspects of treatment, but also they need it in mental aspects as well. In order to improve the quality of life in patients, the treatment team should be able to evaluate how patients perceive their health, welfare, and ability to function in daily life.

According to the results of this study, illness perception in the aspects of consequences, nature, and emotional responses were predictive variables of quality of life in hemodialysis patients.Nurses and treatment personnel can change patients' illness perception by presenting proper educational programs, consulting them and their families about treatment alternatives, having them take part in health improvement programs, rehabilitation, and helping them manage their disease. This in turn can help to improve the quality of life inhemodialysis patients. One of the limitations of this study wasbeingcross sectional. It is suggested that this study is done again by a large number of samples and in a longitudinal form in another place.

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