Study on the Effect of Quality of Life Improvement on Self-Esteem in Patients on Hemodialysis

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Abstract

Background and Objective: Evaluating self-esteem is important in patients with hemodialysis. Low self-esteem as a problem in patients with hemodialysis reduces adherence to treatment in these patients. The objective of the present study was to determine the effect of training of quality of life on self-esteem of patients with hemodialysis.

Materials and Methods: This is a clinical trial study. The society of this study consisted of patients referred to hemodialysis centers in Kerman, Iran. The sample size was 90 patients who were divided randomly based on target into two groups (in each case and control group, n = 45). For both groups, the first test was performed. In the intervention group, a quality of life curriculum was delivered in a lecture, a question and answer, and an educational pamphlet during 3 45-minute sessions. The interval between each session was 10 days. The tools used in this study were demographic questionnaire, quality of life (BREF-WHOQOL) and Rosenberg's self-esteem inventory that was classified in high, medium and low level. Both groups were first tested and in an intervention group training program to improve the quality of life in the form of lectures, question and answer and to provision of educational pamphlets during the three sessions were conducted for 45-minutes with an interval of10 days between each. After two months from the first test, both groups were tested for a second time and then data was analyzed using SPSS/15 Software and descriptive and inferential statistics (mean, standard deviation, Chi-square, independent t-test) were calculated.

Findings: There was no significant difference between the two groups in quality of life and self-esteem before training (respectively P=0.67, P=0.6). After the intervention, there was a significant difference between the two groups in quality of life and self-esteem. (Respectively P=0.001, P=0.001)

Discussion & Conclusion: This study showed that training of quality of life improvement affects self-esteem of patients on hemodialysis. Due to the effect of training on increasing self-esteem and quality of life in patients with hemodialysis, it is recommended to train in quality of life as part of the training program in hemodialysis units, as well as other chronic diseases which may benefit from such training.

Key words: Quality of Life, Self-Esteem, Hemodialysis

Introduction

Chronic diseases can cause psychological and debilitating consequences in patients. One of these diseases is chronic renal failure. (1) According to statistics, the prevalence of chronic renal failure in the world is 260 cases per million people per year and this =increases almost 6% annually. (2) According to the statistics of the Health Ministry, this disease increases 20 percent in Iran annually. (3)

Various methods are recommended for the treatment of patients with chronic renal failure and one of the most effective and most common is hemodialysis. Although, hemodialysis increases longevity in patients with kidney failure, it also poses several problems. Hemodialysis can change the lifestyle, health status and social functioning of individuals. In addition, this method imposes high expenditure and affects quality of life. (4, 5)

On the other hand, hemodialysis is a significant source of stress. According to a study, approximately 10% of patients with hemodialysis were admitted to psychiatric hospitals during one year. (6) These patients need great care in relation to psychological issues of hemodialysis. These people also know that their lives depend on hemodialysis and on the other hand it creates limitations and changes in their lives. Their treatment plan is difficult; sometimes these patients feel they are in a stage between life and death.

The risk of suicide in these patients is much more than normal people. Jobs, financial situation, nutritional, concerns about marriage and sexual problems, readmission and the fear of death, changes their quality of life in the long-term. (7) Such that, the quality of life for patients in end-stage renal failure not only is lower than in ordinary people, but also is lower than other chronic diseases due to frequent hospitalization. (8) Hemodialysis is a long and stressful process, followed by mood disorders and psychological problems for the patients. (1)

Psychologically, chronic renal failure can lead to a dependence on others, low self-esteem and loneliness. (9) Because start of dialysis services for patients is starting a different experience, where standards and the rhythm of life began to change, their desires and abilities are impaired, followed by isolation and low self-esteem. (10)

Research that has been conducted since 1950 shows that diseases, treatment and complications relate to changed image and self-esteem in sick persons. (11) So these patients need to change their ability of coping with changes in lifestyle and behavior. According to the value and the price that these patients ascribe to themselves, their control and mental equilibrium is established. (6) These patients need special training in order to continuously improve self-esteem and motivation to participate in their own care behaviors. (10).

Accordingly, due to the chronic, dynamic and changing nature of the problem in these patients, having high morale and self-esteem can withstand their hardships and suffering. Since, no study has been conducted about the training of quality of life (physical, psychological, familial, social) on self-esteem of hemodialysis patients, the researcher aims to determine the effect of training of quality of life on self-esteem in these patients.

Materials and methods

This clinical trial study was done on patients on hemodialysis who referred to Dialysis center in Kerman. Data collected in this study include:

1. The demographic questionnaire which included age, sex, marital status, education, occupation, income, housing status, income, duration of hemodialysis, time and number of hemodialysis hours per week.
2. The Rosenberg Self-Esteem Scale in five positive and five negative phrase sentences to each question from completely agree, agree, disagree and strongly disagree score (0-3).
3. Quality of Life Questionnaire (WHOQOL-BREF) which consists of 26 questions in the areas of physical health (7 questions) and mental health (6 questions) social relations (3 questions) and environment (8 questions) and two questions in any area. Both questionnaires with score (0-100) were classified in three High (66.7% -100%), moderate (33.4%-66.6%) and low (0%-33.3%) levels.

Content validity was used to examine the validity of the questionnaires. This means that after translation the questionnaires from the original opinion of 10 professors and experts was measured for clarity and simplicity and questions were assigned with numbers from 1 (strongly disagree) to 4 (strongly agree). Scores of items from 0.25 for choosing score 1 and score of 1 for choosing four were considered and in the end scores were calculated so that the average for both questionnaires was cv=0.77.

The reliability of both questionnaires was measured using test-retest and formula (Pearson Brown) and Cronbach's alpha. Reliability of Rosenberg's inventory has been measured repeatedly in Iran and other countries; using Cronbach's alpha coefficient Ozmen et al., and Rajabi et al obtained reliability above 0.8. (12,13) and Nejat et al by standardization of this inventory in Iran, Cronbach's alpha and intra-class correlation values in all fields of the questionnaire were reported above 0.70. (14)

Sathvik et al. calculated reliability of the questionnaire using Test-retest that showed high reliability. (15) In this study, Cronbach's alpha coefficient and Pearson and Brown was obtained respectively for Rosenberg Self-Esteem Scale (r=0.98, α=0.86) and Quality of Life Questionnaire (r=0.95, α=0.85).

The sample size was 45 subjects calculated using a statistical formula; then out of 153 patients with hemodialysis, 9 subjects were selected randomly (draw) according to inclusion criteria which included older than 18 years, passing at least 6 months of hemodialysis, a minimum level of literacy, lack of specific events affecting the self-esteem level (such as burns or change in body shape), kidney transplant and not continuing participating in the same study and were divided into two groups of 45 subjects.

Compliance with all the provisions of the Helsinki Declaration on Ethics of Research, as well as the aim of this study for patients, and written informed consent to participate in research, confidentiality of information and association of patients participating or not participating in the study, both groups were tested for the first time.

Then, according to the manual prepared by the researcher in the components including (physical, psychological, social and familial) with sections such as familiarity with kidney and its function, chronic renal failure and its causes, hemodialysis procedures during its complications, achieving ways to maintain the vascular arteries, diet, nutrient intake and limited food groups, how to calculate daily fluid, example of daily diet, control weight, control appetite and disturbed sleep, daily exercise, ways to boost morale and social and family relationships, leisure, happy way of living, relaxation and meditation and spiritual relationship that were developed after the approval of 10 experts from the Group of different nurses, doctors and nephrologist consensus was reached; during the third training session of 45 minutes with an interval of 10 days between each session, individually and in lectures were conducted and question and answer booklets were provided to participants.

After two months from the last training session, a second test was taken. Data obtained were analyzed using SPSS/15 software and descriptive and inferential statistics (mean, standard deviation, Paired t-test, independent t-test chi-square test) were calculated.

Findings

Based on the results obtained in this study, the mean age of subjects in the case group was 2.22 ± 42.3 years old and in the control group was 2.26 ± 43.12 (57.8%). 57.8% of subjects in the case group were male. In the control group, 60% were male. In the case group, (66.7%) were married. In the control group (68.9%) were married people. The mean duration of hemodialysis in the intervention group was 4.4 ± 7.37, and in the control group was 4.20 ± 6.48 years.

Starting time of hemodialysis in the intervention group was (37.8%) in the control group (40%) was 1-4 years and the number of hemodialysis in intervention group was (84.4%) and in control group was (82.2%) 3 times a week and hours of hemodialysis in the intervention group was (80%) and in the control group (75.6%) was 4 hours that in all cases demographic characteristics were similar between groups using the chi-square test ($P \leq 0.05$). In terms of demographic characteristics there was no statistically significant difference between the two groups using chi-square test. (Table 1 - next page)

The findings related to the components of quality of life (physical, psychological, social relations and environment) and also overall life quality in both intervention and control groups, in pre-test and post-test in high, medium and low levels as shown in Table 2. According to this table, there is a significant difference between the percentage of patients in each of the levels classified into four components (physical, mental health, social relations and environment) and also quality of life in the two groups in pre-test and post-test.

Findings related to the comparison of components of quality of life (physical, psychological, social relations and environment) and also overall life quality in the pre-test and post-test in intervention and control groups in three levels of high, medium and low levels are shown in Table 3.

According to this table, in all 4 components (physical, mental health, social relations and the environment) and also overall quality of life in the two groups in the pretest of all sizes is ($P \geq 0.05$) As a result there is no significant difference; but in the post-test of all sizes and also overall life quality is ($P \leq 0.05$), thus there is a significant difference. Findings also related to self-esteem in the intervention and control groups, in the pre-test and self-esteem compared between the two groups in pre-test and post-test is shown in Table (4).

According to Table 4, there is no significant difference between the two groups in self-esteem of patients in the pretest ($P \geq 0.05$), but there is a significant difference in the post-test ($P \leq 0.05$).

Table 1: Demographic factors in two groups.

* P	percent of control	percent of intervention	Variable
			Gender
	40	42.2	Women
0.83	60	57.8	Men
	6.7	8.9	**Age**
			Lower 25 years old
	26.7	28.9	25-34
	17.8	13.3	35-44
0.92	15.6	11.1	45-54
	33.3	37.8	55+
			Marriage status
	26.7	26.7	Single
	68.9	66.7	Married
0.89			**Education**
	33.3	35.6	Primary
	26.7	31.1	Secondary
	26.7	24.4	Diploma
0.89	13.3	8.9	Academic
			Job
	4.4	2.2	Employee
	6.7	8.9	Worker
0.98	33.3	33.3	Housewife
	8.9	8.9	Free
	26.7	28.9	Retired
	20	17.8	Unemployed
			Monthly income
	37.8	35.6	2.500.000 rials >
	46.7	42.2	2.500.000 – 5.000.000 rials
0.71	15.6	22.2	5.000.000 rials <
			Status of life
	48.9	53.3	Living with couple and children
	20	13.3	Living with couple
0.82	26.7	26.7	Living with parents
	4.4	6.7	Living with children
			Duration of starting dialysis (year)
	22.2	24.4	Lower 1 year
0.92	40	37.8	1-4 years
	22.2	17.8	5-9 years
	13.3	13.3	10-14 years
	2.2	6.7	Above 15 years old
			Times of dialysis in a week
	17.8	15.6	2 times
0.77	82.2	84.4	3 times
			Hour of dialysis
	24.4	20	3 hours
0.61	75.6	80	4 hours

Chi-square = 2 χ   *Result of tes**t**

Table 2. Frequency distribution of each component and quality of life among the two groups in pre-test and post-test

Control group						Intervention group						
Post-test			Pre-test			Post-test			Pre-test			
low	middle	High	low	middle	High	low	middle	High	*low	middle	High	
75.6	24.4	0	73.3	24.4	2.2	60	28.9	11	71.1	24.4	4.4	Physical component
71.1	24.4	4.4	71.1	24.4	4.4	35.6	48.9	15.6	68.9	26.7	4.4	Mental health
20	64.4	7	20	73.9	6.7	4.4	44.4	51.1	17.8	68.9	13.3	Social relation
48.9	48.9	2.2	48.9	48.9	2.2	24.4	68.9	6.7	44.4	53.3	2.2	Environmental health
62.2	37.8	0	64.4	35.6	0	24.4	68.9	6.7	60	40	0	Total quality of life

* High (7-66.100) moderate (4.6-33.66) Low (0.3-33) numbers are based on the percentage in table.

Table 3: Comparison of each component and quality of life between two groups in both tests

Post-test (between two groups)			Pre-test (between two groups)			
p-value	df	χ^2	** p-value	df	* χ^2	
0.05	2	5.97	0.84	2	0.34	Physical components
0.003	2	11.7	0.97	2	0.05	Mental health
0.001	2	14.64	0.57	2	1.12	Social relations
0.04	2	6.19	0.91	2	0.18	Environmental health
0.001	2	14.49	0.66	1	0.18	Total quality of life

* X^2 = Chi-square   **P≤0.05= 2 χ *

Table 4: Distribution of frequency of self-esteem in three levels of two groups and comparing both tests

Post-test			Pre-test			Self-esteem
low	middle	High	low *	middle	High	
42.2	51.1	6.7	44.4	48.9	6.7	Control group
4.4	35.6	60	35.6	55.6	8.9	Intervention group
P-value	df	χ^2	0.77 *** p-value	df	** χ^2	Comparing two groups
0.001	2	34.2	0.67	2		

Chi-square ***P≤0.05 = 2 χ **; * High (66.7-100) moderate (33.4-66.6) Low (0-33.3) numbers are based on the percentage table.

Discussion and Conclusion

Findings obtained in this study showed that quality of life in patients on hemodialysis in both physical and psychological domains is at a low level, in social relations and environmental health is at intermediate level and overall quality of life is at a low level. Taheri and Baraz reported the quality of life in patients on hemodialysis at a low level. (16, 17) Rodrigues et al stated in their study that mean score for quality of life in hemodialysis patients was lower than normal and this indicates low quality of life in these people. (18)

However, Mazairac in a study on 570 patients on hemodialysis reported the quality of life in the optimal level. (19) In this study, after training in the intervention group, quality of life increased to an intermediate level. Other studies have also confirmed the results. Alikari et al with training in form of counseling, booklets and educational films indicated a positive effect on the quality of life in patients on hemodialysis. (20)

De Moura Reboredo et al also showed that training exercises can improve the quality of life in patients on hemodialysis. (21) Loos Aya et al in France showed that self-care training affects quality of life in patients on hemodialysis, during one year, training affected the quality of life in people on hemodialysis and increased it in different aspects. (22)

Yen et al, in Taiwan also stated that training increases physical, mental and social aspects in patients. (23) Although the above study indicates the effectiveness of training on improving the quality of life in patients, however, in the mentioned studies the score of quality of life is different, and this is due to the different education programs applying different questionnaires to assess quality of life, as well as the different needs of patients.

This study showed that patients' self-esteem before training sessions was at intermediate level and after the intervention was at a higher level. This study is consistent with Chen et al on the effects of group therapy on self-esteem and depression. Their study showed that group therapy increases self-esteem and decreases depression in patients. (24) Lee et al showed in a study on patients with cancer that telling some stories of people with cancer increases their self-esteem, self-efficacy and positive attitudes in the patients. (25) Poorgholami et al also showed that follow-up care increases patients' self-esteem (1). All these research studies are consistent with the results of the present study.

According to the results, due to the fact that high self-esteem increases ability to adapt to different conditions and controls threatening aspects in patients on hemodialysis it is of utmost importance and it can be concluded that quality of life where it covers almost every aspect of life can affect the physical and mental aspects such as self-esteem in patients on hemodialysis faced with different complications of mortality and costs of treatment, quality of life, physical and psychological problems and have positive impact on them and eases the burden of their disease.

It should be noted, the limitations in this study are small sample size and short duration of the study. Therefore, it is recommended to conduct some studies with larger sample size and longer follow-up period. Also, some studies on the effect of family therapy, training of social relations on self-esteem of patients on hemodialysis should be conducted. Finally, since the objective of nursing research is to enjoy results that solve the problems and consequences of care, reduce costs, increase quality of service and improve the health of society, findings of this study can be used in various fields of nursing, family, community, media and training.

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