Comparison of life expectancy, quality of life, irrational health beliefs, health locus of control and hospital depression in patients undergoing hemodialysis and heart transplant in Shahid-Rajaee hospital

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ABSTRACT

Introduction: Physical and mental disorders are highly prevalent in patients undergoing hemodialysis and heart transplant and thus reduce the outcomes of patients. Management of these disorders can improve heart and kidney diseases, promote quality of life of patients and reduce their treatment costs. This study compares life expectancy, quality of life, irrational health beliefs, health locus of control, and hospital depression of patients undergoing hemodialysis and heart transplant in Shahid-Rajaee hospital.

Materials and Methods: This cross-sectional study was conducted in 2016 on 190 patients with a history of hemodialysis and heart transplant in Shahid-Rajaee hospital. Data were collected by using adult hope scale, quality of life scale, multidimensional health locus of control (MHLC) scale, irrational belief test, and hospital anxiety and depression scale.

Results: the results showed a significant difference between hemodialysis and heart transplant patients in irrational health beliefs (p=0.001) and hospital depression (p=0.001). Moreover, there was no significant difference between hemodialysis and heart transplant patients in life expectancy (p=0.70), quality of life (p=0.68) and hospital depression (p=0.21).

Conclusion: hemodialysis patients and heart transplant patients are significantly different in irrational health beliefs and hospital depression considering their physical and mental conditions caused by the disease.

Keywords: life expectancy, quality of life, irrational health beliefs, health locus of control, hospital depression, hemodialysis-undergoing patients, heart transplant patients

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INTRODUCTION

Mental health is a specialized area of psychiatry in preventing mental diseases, controlling factors contributing to mental diseases and providing a healthy environment for proper mental health and human relations.[1] Currently, one of the new concepts considered in psychological sciences, particularly mental health, is the concept of quality of life.[2] The World Health Organization (WHO) defines quality of life as one's perceptions of life with respect to culture and value system in which one lives and the relationship between these perceptions and his goals, expectations, standards and priorities, which include all important factors and conditions of life such as physical, psychological, social and cultural conditions. Lifestyle refers to a unique model of characteristics and behavioral habits of human in everyday life and social situations.[3] Lifestyle involves behaviors dealing with nutrition, health, personal care and communication, participation in housekeeping, mobility, responsibility, interpersonal relationships, social life, education, work,

and leisure. Life expectancy is defined as an inner force which can enrich life, enabling patients to see a vision beyond their current situation of pain and suffer. Lack of life expectancy and purposefulness reduces the quality of life and leads to disappointing beliefs. Future orientation, positive expectations, purposefulness, realism, goal-setting and internal communications are important features of life expectancy. On the contrary, disappointment is defined as tolerance of insuperable situation in which no goal is expected to achieve, and it is associated with depression, death wish, and suicide. By definition, life expectancy involves imagination and attention to future which leads to endeavors of patients assuming that positive outcomes may be achieved.[4] Some psychologists believe that irrational beliefs increase neurotic and psychotic disorders, which gradually lead to the inability to deal with problems of life. Avoidance habit provokes a feeling of inability and inefficiency and gradually predisposes one to use this habit to solve all problems of

life. Compared with healthy subjects, depression has been reported significantly higher in cardiac patients. Another study showed that patients with acute coronary syndrome experienced higher psychological distress in dealing with stressful life events than healthy people; their coping responses were mainly based on emotional inhibition and experienced higher interpersonal conflicts in quality of their relations.[1] Different studies showed that depression is associated with increased risk of death in cases of mild to moderate depression (based on >10 points in Beck questionnaire). In addition to outlining physical problems, diagnosis of heart and kidney diseases causes significant impairment in the mental state of patients.[2] These disorders may include anxiety, depression and future uncertainty. Anxiety and depression are highly prevalent in patients with heart and kidney diseases and reduce treatment outcomes and performance of patients.

Through a descriptive-analytic study on 60 hemodialysis patients, Sajjadi et al. (2008) examined the relationship between self-care and depression in hemodialysis patients and found a strong and negative correlation between self-care and depression. By increasing self-care, depression decreased in patients. Therefore, they recommended that these patients be examined regularly for depressive symptoms in order to be diagnosed in a timely manner. By providing the appropriate context and encouraging patients to increase adherence to self-care behaviors and doing so, psychological and physical complications of hemodialysis treatment can be reduced.

Habibzadeh et al. (2012) evaluated the effect of Orem care model on self-efficacy level of 60 patients undergoing hemodialysis. The designed self-care program was performed in three stages for the intervention group, and the results showed significant differences between the intervention and control groups in terms of self-efficacy level. Considering the dependence of hemodialysis patients on receiving care services, it will be helpful to recognize self-care requirements of patients based on nursing theories and care planning inpatient adjustment and increase in self-care activities.

Evaluating the effect of cognitive-behavioral group therapy on problems of dialysis patients, Chen et al. (2008) found that self-care, self-efficacy, quality of life, and quality of sleep were significantly increased in patients compared to control group.

Ahmadvand et al. (2012) evaluated the effect of cognitive-behavioral group therapy on anxiety and depression in 36 hemodialysis patients during 12 weeks (once a week) in control and test groups; using Beck's questionnaire, they found that depression score of patients was reduced from 35 to 22,

suggesting that group therapy has an effective role in reducing depression in hemodialysis patients.

Moreover, anxiety and depression are the most important factors influencing health-related quality of life; their effects have been reported higher on physical aspects of quality of life such as left ventricular ejection fraction, angina, and other chronic diseases. Depression is a disabling condition which can cause heart and kidney diseases; this disorder has been reported in 20% of patients.[5] This study aimed to compare life expectancy, quality of life, health irrational beliefs, health locus of control and hospital depression in patients undergoing hemodialysis and heart transplant in Shahid-Rajaee hospital.

MATERIALS AND METHODS

This was a descriptive, analytic and cross-sectional study. The studied population included patients undergoing hemodialysis and heart transplant in Shahid Rajai Hospitals, Tehran. The sample size was estimated at 60 in each group of patients undergoing hemodialysis and heart disease; the samples were recruited by simple random sampling. By considering the likelihood of sample loss, 20 patients were added to the initial sample size. The inclusion criterion was patients undergoing hemodialysis or heart transplant. Written informed consent was obtained from the patients after the objective of the study was explained. Data were collected by using Adult Hope Scale (AHS), quality of life scale, Multidimensional Health Locus of Control (MHLC), Irrational Belief Test (IBT), Hospital Anxiety and Depression Scale (HADS) and a questionnaire including demographic variables. The data collection was completed by interview and review the results with the patients afterward. Reliability of the questionnaires was confirmed by calculating Cronbach's alpha, and the alpha coefficient was estimated to be 0.84 based on a preliminary study on 20 patients using the test-retest method with an interval of 2 weeks. The collected data was analyzed using SPSS. After the distribution of absolute and relative frequency was determined, the statistical t-test was used to analyze the data.

Inclusion criteria included:

1. Undergoing dialysis;
2. No substance abuse;
3. Patient awareness and cooperation;
4. No vascular diseases and no diseases engaging musculoskeletal system;
5. No diabetes and infectious, skin and peripheral vascular diseases (Lupus and Scleroderma);

6. No fever and signs of infection;
7. No concomitant therapies such as radiation therapy.

Exclusion criteria included:

1. Unwillingness of the patient or family to continue cooperation;
2. Occurrence of infection-implying symptoms;
3. In the event of a patient's death.

INSTRUMENTS

AHS: This scale was analyzed using ten items based on a scale developed by Snyder with positive and negative orientation. AHS, developed in 1991, is a self-report questionnaire. Hope is an essential element helping people cope with life's difficulties and resist against obstacles. Despite the importance of hope, we find ourselves completely helpless. If you ever had these experiences and felt that you have lost hope, you need to think more about your future and foster it in yourself (Siadatian, et al., 2012). The Cronbach's alpha coefficient for this scale was estimated to be 0.70 and 0.74 after one month. Construct validity of the scale has been substantially good.

Quality of life scale: This scale was developed by Darvish-Poor Kakhaki et al. in Iran, fitting to conditions of the society.[6] Reliability was measured by Cronbach's alpha coefficient of 0.95, and the retest coefficient was 0.92. The scale was validated by formal and content validity as well as construct and criterion validity. This scale measured physical aspect (9 questions), mental aspect (11 questions), social aspect (7 questions), economic aspect (5 questions), disease and treatment (13 questions) and quality of life in a general statement.

Multidimensional health locus of control (MHLC) scale: This scale was developed by Wallston and DeVellis on a 6-point Likert scale in 18 items. MHLC was developed by Wallstone et al. (1978) to determine health locus of control in people. The fact that a person has a health locus of control, whether internal or external, is based on a set of specifications. These specifications are scaled up, and they determine the type of health locus of control in people.

One-dimensional scales for control type measurements were first developed by Wallstone et al. MHLC scale consists of three components on a 6-point Likert scale and abbreviated to the following words:

1. Powerful others health locus of control (PHLC): includes the degree to which a person believes that his or her health is determined by other people.
2. Internal health locus of control (IHLC): includes the degree to which a person believes

that his internal factors and behaviors are responsible for his illness and health.
3. Chance health locus of control (CHLC): includes the degree to which one believes that his health depends on luck, fortune, and destiny.

The questionnaire has three forms A, B, and C, each containing eighteen statements, and each component have six phrases. Form A and B were published in 1978. Form C, which can be used for certain diseases or conditions, was published in 1994. These forms are filled in 10-14 minutes.

Hatamloui Saadabadi et al. estimated reliability for each component of internal locus of control, external locus of control or powerful others and chance at 0.94, 0.75, and 0.90, respectively.

Irrational belief test (IBT): This test was developed based on Ellis's theory to evaluate inefficient thoughts which measure 10 irrational thoughts. In this 100-item test, each item measures one irrational thought; for example, 'It is important to me that others approve of me' or 'I avoid things I cannot do well'. Reliability of each subscale was reported at 0.66-0.80 and the mean reliability of all subscales was reported at 0.74.[7] Validity of the test was examined by using formal validity and convergent validity; coefficient of correlation with Beck depression test was calculated (r=0.82).

Hospital anxiety and depression scale (HADS): HADS measures anxiety and depression in 14 items; 7 items are related to anxiety and 7 items are related to depression. In total, 21 points are gained from each subscale. The accumulated result of 0-7 points indicates healthy, 8-10 points indicates borderline disorder, and, 11 and higher points indicates suspected disorder. Montazeri calculated validity of the translated form at 0.78.

Table 1 lists demographic variables. As the table shows, 72.2% of participants were male and 27.8% were female. The participants aged 25-31 years (5.2%), 31-35 years (18.4%), 36-40 years (34.2%) and 41 years and older (42.1%).

Independent t-test was used to calculate descriptive variables in order to compare life expectancy, quality of life, health irrational beliefs, health locus of control, and hospital depression in patients undergoing hemodialysis and heart transplant in Shahid-Rajaee hospital.

As shown in Table 2, Kolmogorov-Smirnov score was not significant for all variables. Therefore, distribution of these variables was normal in the groups; thus, parametric tests could be used.

As shown in Table 3, hemodialysis patients and heart transplant patients had significant difference in irrational health beliefs (p=0.001) and hospital depression (p=0.001). On the other hand,

Table 1   Demographic variables

Variable	N	%
Gender		
Male	137	72.2
Female	53	27.8
Age		
25-31	10	5.2
31-35	35	18.4
36-40	65	34.2
41 and older	80	42.1

Table 2   Descriptive variables for patients undergoing hemodialysis and heart transplant

Variable	Group	Mean	SD	K-S Z	p
Life expectancy	Hemodialysis	10.32	1.93	0.458	0.345
	Heart transplant	10.11	1.84	0.365	0.547
Quality of life	Hemodialysis	14.80	6.63	0.911	0.378
	Heart transplant	13.20	1.69	0.731	0.66
Health Irrational Beliefs	Hemodialysis	18.33	5	0.420	0.995
	Heart transplant	17.27	3.63	0.759	0.612
Health Locus of Control	Hemodialysis	14.67	3.20	0.743	0.639
	Heart transplant	13.40	2.56	0.692	0.725
Hospital depression	Hemodialysis	28.60	8.68	0.458	0.985
	Heart transplant	31.27	8.07	0.734	0.654

SD: standard deviation, K-S Z: Kolmogorov-Smirnov score

Table 3   Comparison of variables in hemodialysis patients and heart transplant patients

Variable	Df	Mean variance	T	Sig.
Life expectancy	118	0.03	0.335	0.70
Quality of Life	118	0.05	0.411	0.68
Health irrational beliefs	118	0.30	4.56	0.00
Health locus of control	118	0.07	1.31	0.21
Hospital depression	118	0.29	3.56	0.00

Df: degree of freedom

hemodialysis patients and heart transplant patients had no significant difference in life expectancy (p=0.70), quality of life (p=0.68) and hospital depression (p=0.21).

CONCLUSION

This study compared life expectancy, quality of life, health irrational beliefs, health locus of control, and hospital depression in hemodialysis patients and heart transplant patients. Findings showed no significant difference in life expectancy between hemodialysis patients and heart transplant patients.

This implies physical disorder in both groups of patients. Reviewing studies related to hope, Banson believes that high levels of hope are positively related to physical and psychological health, high self-worth, positive thinking, and social relations.[8] This finding is consistent with the current study. There was no significant difference in the quality of life of hemodialysis patients and heart transplant patients.

Weakness and fatigue are the most bothersome symptoms of hemodialysis and heart transplant. Benedict et al. showed that fatigue and physical problems are the most disturbing symptoms of disease.[9] Miller and Dishon showed a significant relationship between inability and physical and mental aspects of quality of life; higher inability is associated with lower quality of life.[10] Findings showed a significant difference in irrational health beliefs between hemodialysis and heart transplant patients. Data analysis showed that irrational beliefs were higher in hemodialysis patients than heart transplant patients. One's beliefs and thoughts can influence his or her behavior. In other words, this type of individual beliefs determines behavior, not enabling event, or the same thing happened. Rational beliefs lead to reasonable emotional and behaviors outcomes and help to maintain mental health.[11] On the contrary, irrational beliefs such as excessive anxiety about future, concerns about the availability of goals, and helplessness to changes in life lead to a frequent experience of high levels of stimulation in hemodialysis patients. This feeling of stimulation is frequently experienced by patients who failed to achieve their goals. Moreover, findings showed no significant difference in health locus of control between hemodialysis and heart transplant patients. In patients undergoing hemodialysis and heart transplant, various psychological factors such as health locus of control are important factors in the sense of responsibility for disease control and self-care behaviors. Health locus of control refers to one's belief that his or her health is controlled by internal or external factors. Brannon and Feist showed that patients who rely more on themselves and less on others probably have weaker collaboration with healthcare providers.[12] This study showed a significant difference in hospital depression between hemodialysis patients and heart transplant patients. Data analysis showed that hospital depression was generally higher in heart transplant patients than hemodialysis patients. The higher level of depression in heart transplant patients can be attributed to the fact that these patients assume their disease is more severe, which require more interventions and they stay longer in hospital. This is particularly seen in patients waiting

for coronary artery bypass surgery. Patients always ask themselves 'will I experience angina again? Will I be cured completely? Will I survive the surgery?' Patients undergoing coronary artery bypass graft surgery require extensive changes in lifestyle and need extensive cares. Findings are consistent with Lett et al.[13] and Glassman et al.[14] Based on current findings, it is suggested to reinforce the idea of health locus of control, particularly internal health locus of control to improve conditions of hemodialysis and heart transplant patients. In homogenous consulting groups (based on education, type of disease, gender, duration, etc.), it is suggested to train coping mechanism, simultaneously with the use of different treatments and then compare their effectiveness.

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