

Relationship Between Spiritual Health and Stress, Depression, and Anxiety in Hemodialysis Patients

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Abstract

Background: Chronic diseases confront the patient with questions about the meaning and the purpose of life, and many patients recognize spiritual health as a factor in creating meaning and purpose in life and improving the quality of life.

Objectives: The aim of this study was to determine the relationship between spiritual health and stress, depression, and anxiety in hemodialysis patients of Birjand Special Diseases Center in 2019.

Methods: In this descriptive-analytical cross-sectional study, using the census method, all the dialysis patients visiting Birjand Special Diseases Center, Iran, were examined. A three-part questionnaire was used to collect information in this study. The first part deals with patient demographic information (i.e., age, gender, marital status, degree, occupation, duration of dialysis per week, and medical history), the second part includes the DASS21 standard questionnaire, and the third part comprises the Ellison-Palutzian spiritual health standard questionnaire. Data analysis was performed by the Mann-Whitney, ANOVA, and Pearson correlation coefficient.

Results: In this study, 119 hemodialysis patients were studied, of which 77 (64.7%) were male. The mean depression, anxiety, and stress scores of the participants in the study were 18.8 ± 7.52 , 16.43 ± 7.13 , and 19.36 ± 8.31 , respectively. The mean spiritual health of the patients studied was 82.37 ± 12.12 . The results showed a significant ($P < 0.05$) inverse relationship between spiritual health and depression, anxiety, and stress in the patients studied.

Conclusions: The findings showed that patients with higher spiritual health scores experienced less anxiety, stress, and depression. Thus, more focus should be on improving the spiritual health of hemodialysis patients by medical staff in the process of admitting and dealing with them in hospitals and medical centers.

Keywords: Stress; Anxiety; Depression; Spiritual Health; Hemodialysis

1. Background

Chronic renal failure is one of the diseases that affects the quality of life and is described as a progressive and irreversible renal dysfunction (1). Between 8 and 10% of the adult population have some form of kidney damage, and every year millions die prematurely due to complications related to chronic kidney diseases (CKD) (2). The advanced stage of kidney failure, in which a person requires dialysis or a kidney transplant to survive, is considered as end-stage renal disease (ESRD), which is increasing worldwide (3). In order to prevent the increase of blood urea and its complications, the patient turns to common treatments, including hemodialysis, peritoneal dialysis, and finally, kidney transplantation (4).

In most countries, hemodialysis is the most common treatment for this disease, and in Iran, according to the latest statistics provided by the Iranian Society of Nephrology, there are more than 31,000 dialysis patients (5, 6). The goal of hemodialysis is to extract toxic nitrogenous substances from the blood and remove excess water from the body. Although this method does not improve kidney disease and does not compensate for the loss of endocrine and metabolic activities of the kidneys, it saves the patient's life (7). Hemodialysis, as a treatment for kidney failure, is stressful and is associated with numerous psychological and social tensions. Depression (37% of cases), anxiety (20% of cases), psychosis, and aggression are among the common psychological disorders in dialysis



patients (8).

Depression is the most common psychological and physical complication that has a significant negative effect on a person’s functional capacity and is an significant factor in reducing treatment adherence. In addition, in dialysis patients, several aspects of quality of life have shown a significant correlation with spiritual health. Decreased spiritual health in hemodialysis patients affects their quality of life and impairs their function in various dimensions (9, 10). Anxiety disorders in ESRD patients undergoing hemodialysis have been studied over the years, and the impact of anxiety on health-related quality of life has been widely recognized (11).

On the other hand, debilitating and chronic diseases confront the individual with questions about the meaning and aim of life, and many patients recognize spiritual health as an effective factor in creating meaning and aim in life and improving the quality of life (12). Spiritual health is one of the four dimensions of health defined by the World Health Organization (WHO), including physical, social, and mental health (13). However, ignoring the patient’s spiritual health dimension is currently one of the major challenges facing the health care system (14).

2. Objectives

The aim of this study was to determine the relationship between spiritual health and stress, depression, and anxiety in hemodialysis patients of Birjand Special Diseases Center in 2019.

3. Methods

3.1. Study Design

In this descriptive-analytical cross-sectional study, using the census method, all the dialysis patients referred to Birjand Special Diseases Center in 2019 (from May to December) were examined. The inclusion criteria included age over 19 years, ESRD diagnosis, and undergoing maintenance therapy at least once a week for three hours or more per session, interest in participating in the

study, and the ability to understand and speak Persian. Exclusion criteria comprised of previous depression and anxiety disorders, travel, transplant surgery, death, the occurrence of severe stressful events such as death of a first-degree relative, suffering from other chronic diseases (such as a variety of disabilities, debilitating diseases such as MS, and different types of cancers) or taking medications other than those used for maintaining chronic kidney failure, high blood pressure, and diabetes.

After the approval of the Ethics Committee of Birjand University of Medical Sciences, Iran (IR.BUMS.REC.1398.55) and sending a reference letter to the Specific Diseases Center of Birjand, Iran, sampling was carried out in accordance with the ethical considerations of the Helsinki Declaration. A three-part questionnaire was used to collect data in this study. The first part deals with patient demographic information (e.g., age, gender, marital status, academic degree, occupation, duration of dialysis per week, and medical history), the second part includes the DASS21 standard questionnaire, and the third part comprised the Ellison-Palutzian spiritual health standard questionnaire.

3.2. Diagnosing Stress, Anxiety, and Depression

The Depression Anxiety Stress Scales (DASS) was developed in 1995 by Lovibond (15), which includes 21 questions with seven questions related to stress, seven related to anxiety, and seven related to depression. This standard questionnaire in Iran was validated by Sahebi et al. in 2005, and its validity was established through Cronbach’s alpha 0.94, 0.92, and 0.89 for depression, anxiety, and stress, respectively (16). There were four options for answering the questions, which were completed by self-assessment. The range of responses alters from “never” to “always”, and scoring ranged from zero to three so that a score of zero is considered for the “never” option, a score of one for the “a little” option, a score of two for the “sometimes” option, and a score of three for the “always” option. Since the DASS-21 scale is the shortened form of the original 42-item scale, the final score of each subscale was doubled. The sum of the scores was summed up and interpreted according to Table 1.

Table 1. Scoring the Severity of Symptoms of Various Parameters of Depression, Anxiety, and Stress According to DASS-21

Grading	Depression	Anxiety	Stress
Normal	0 - 9	0 - 7	0 - 14
Mild	10 - 13	8 - 9	15 - 18
Moderate	14 - 20	10 - 14	19 - 25
Severe	21 - 27	15 - 19	26 - 33
Extremely severe	28 and more	20 and more	34 and more

3.3. Diagnosing Spiritual Health

The Ellison-Palutzian Spiritual Health Questionnaire is a standard questionnaire and has been evaluated in various scientific studies. In Iran, its Cronbach’s alpha coefficient was set at 0.82, and the scientific validity of the

questionnaire was confirmed (17). The Spiritual Health Questionnaire includes 20 items rated on a 6-point Likert scale (from totally disagree to totally agree). On this scale, spiritual health includes two domains: (1) religious

health, and (2) existential health. Each domain contains 10 phrases that have a score range of 10 - 60. Phrases with an odd number assess religious health, and phrases with an even number evaluate existential health. The total score of spiritual health is the sum of these two subgroups, and it ranges between 20 and 120. Finally, the spiritual health of the individuals is divided into the three categories of low (20 - 40), moderate (41 - 99), and high (100 - 120).

3.4. Statistical Analysis

Data were categorized and coded according to the standard instructions, and each question was given the desired score. Then, SPSS version 19 was used to analyze the data. Using descriptive statistics (i.e., percentage distribution, frequency, mean, and standard deviation) and in-

ferential statistics methods (i.e., Mann-Whitney, ANOVA, and Pearson correlation coefficient), the data were analyzed at a significance level of 0.05.

4. Results

In this study, 119 hemodialysis patients were studied, of whom almost 65% were male. The mean age of these patients was 48.98 ± 14.6 years (age range: 19 - 83 years). Approximately 74% of the participants were married. In terms of educational status, most of the subjects (65.5%) had a diploma or sub-diploma (Table 2). In terms of dialysis duration, 6.7% of the patients had a history of one year or less, 21.8% had a history of 1 - 3 years, 47.9% had a history of 3 - 6 years, and the remaining patients (23.6%) had a history of 6 years or more.

Table 2. Comparison of Mean Anxiety, Depression, Stress Scores, and Spiritual Health of the Studied Patients According to Demographic Characteristics a

Variables	No. (%)	Spiritual Health	Stress	Anxiety	Depression
Gender					
Male	77 (64.7)	82.62 ± 13	18.25 ± 8.3	15.58 ± 7.37	17.76 ± 7.85
Female	42 (35.3)	81.92 ± 10.44	21.38 ± 8.05	18 ± 6.46	20.71 ± 6.53
P-value		0.82	0.04	0.21	0.09
Marital status					
Single	31 (26.05)	78.19 ± 10.22	21.87 ± 8.14	16.64 ± 6.6	20 ± 6.28
Married	88 (73.95)	83.85 ± 12.44	18.47 ± 8.24	16.36 ± 7.34	18.38 ± 7.9
P-value		0.01	0.04	0.67	0.32
Education					
Diploma and sub-diploma	78 (65.54)	82.05 ± 11.59	20 ± 8.09	16.76 ± 7.06	19.61 ± 6.42
Associate degree	6 (5.04)	74.33 ± 5.68	20.33 ± 6.62	18.33 ± 6.74	20.33 ± 4.08
Bachelor	26 (21.84)	84.73 ± 13.61	16.92 ± 9.6	14.69 ± 7.5	16.3 ± 10.44
Master's and Ph.D.	9 (7.58)	83.77 ± 14.26	20.22 ± 7.1	17.33 ± 7.14	18 ± 7.54
P-value		0.34	0.68	0.5	0.74
Job					
Retired	16 (13.44)	84 ± 14.82	17.12 ± 8.29	15.87 ± 8.3	17.37 ± 9.31
Self-employed	28 (23.52)	78.46 ± 11.32	18.64 ± 7.96	15 ± 6.42	18.92 ± 6.07
Housewife	35 (29.41)	83.65 ± 10.24	20.8 ± 8.41	17.82 ± 6.81	20.4 ± 6.73
Unemployed	20 (16.8)	82.7 ± 14.17	19 ± 9.25	17.7 ± 8.34	19 ± 8.97
Employee	15 (12.6)	84.06 ± 12.29	19.33 ± 8.7	15.33 ± 6.57	16.26 ± 8.54
Student	5 (4.23)	83.8 ± 11.07	22 ± 5.47	14.8 ± 6.09	18.4 ± 3.84
P-value		0.23	0.56	0.36	0.53

^a Values are expressed as No. (%) or mean ± SD unless otherwise indicated.

The average number of dialysis sessions per week was 2.48 ± 0.69 . In detail, 8.4% of the patients underwent dialysis one day a week, 37.8% two days a week, 50.4% three days a week, and 3.4% four days a week or more. The mean scores of depression, anxiety, and stress in the study participants were 18.8 ± 7.52 , 16.43 ± 7.13 , and 19.36 ± 8.31 , respectively. The mean spiritual health of the patients studied was 82.37 ± 12.12 (Table 3). Stress level was higher in female patients than male patients ($P < 0.05$). Moreover, the results showed that married patients had lower stress levels than single patients ($P <$

0.05). There was no significant relationship between stress, anxiety, depression, and spiritual health and academic degree, occupation, and duration of dialysis per week. The results of the study also showed that spiritual health status was higher in married patients ($P < 0.05$). However, a significant inverse relationship was noted between spiritual health and depression, anxiety, and stress. Also, according to the findings presented in Table 4, there was a significant positive correlation between each of the psychological disorders of depression, anxiety, and stress

Table 3. Range, Mean and Standard Deviation of Spiritual Health Scores in the Patients Studied

Scores	Achievable Score Range	Achieved Score Range	Mean ± SD
The religious dimension of spiritual health	10 - 60	30 - 50	44.47 ± 8.07
The existential dimension of spiritual health	10 - 60	19 - 60	37.9 ± 6.21
The overall score of spiritual health	20 - 120	55 - 118	82.37 ± 12.12

Table 4. The Relationship of Depression, Anxiety and Stress with Spiritual Health in the People Studied

	Depression	Anxiety	Stress	Spiritual health
Depression	-	r = 0.71; P = 0.00	r = 0.79; P = 0.00	r = -0.55; P = 0.00
Anxiety	r = 0.71; P = 0.00	-	r = 0.72; P = 0.00	r = -0.5; P = 0.00
Stress	r = 0.79; P = 0.00	r = 0.72; P = 0.00	-	r = -0.47; P = 0.00
Spiritual health	r = -0.55; P = 0.00	r = -0.5; P = 0.00	r = -0.47; P = 0.00	-

5. Discussion

The aim of this study was to determine the relationship between spiritual health and stress, anxiety, and depression in patients undergoing hemodialysis. The overall score of patients' spiritual health in this study was moderate (82.37 ± 12.12), which is similar to previous studies aimed at assessing the level of spiritual health (18-20). Also, the mean score of religious dimension of patients' spiritual health (44.47 ± 8.07) was higher than its existential dimension (37.9 ± 6.21); this result is consistent with the findings of Dehbashi et al., who studied the level of spiritual health and hope in hemodialysis patients (21). This could be due to the cultural-religious lifestyle of the study community, as well as the fact that more patients turn to religion in times of crisis and stressful situations (22). Contrary to the present study, the study of Ghanbari et al. (2017) on spiritual health of patients with acute coronary syndrome showed a higher level of existential health than spiritual health, which indicates that some patients in crisis situations experience conflicts and dichotomies between meaning and aim. The pain and suffering caused by diseases challenge the meaning of life and the aim of being alive in these patients (23).

We found a significant negative correlation between patients' spiritual health and stress, anxiety, and depression, which has been confirmed in various studies. Safavi et al. (2016), in a study that examined the relationship between spiritual health and stress, anxiety and depression in patients with heart failure, concluded that stress, anxiety, and depression exist moderately, and there is a significant negative correlation between these three components and spiritual health (24). Sadeghifar et al. (2016), in a study of hemodialysis patients established a negative significant relationship between the dimensions of spiritual health and stress, depression, and anxiety. There was also a relationship between all aspects of prayer, including previous experience and attitudes toward prayer, except for the frequency of prayer, with stress, anxiety, and depression (25). In another study, Flint et al. (2019) investigated the effect of spiritual health on depression, anxiety, and bothersome symptoms in patients with heart failure and concluded that spiritual

health was significantly and negatively associated with depression, anxiety, and bothersome symptoms in these patients, and by increasing the level of spiritual health, people's quality of life can be improved (26).

However, contrary to our results, Soudagar et al. (2017), in a study to determine the prevalence of stress, anxiety, and depression among patients with diabetes and its relationship with spiritual health, showed that spiritual health is not associated with stress. However, there was a significant negative relationship with anxiety and depression, which can be due to differences in the type of disease, duration of disease, culture, and lifestyle (27). Hosseini et al. (2019) also examined the relationship between depression and spiritual health in pregnant mothers, stating that the average score of spiritual health in most patients was at a high level and concluded that these two components were not associated. This could be due to the researcher's use of a different questionnaire and the specific circumstances of pregnant mothers (28). In explaining these findings, it can be stated that because kidney diseases are among the chronic diseases and hemodialysis is considered an invasive practice in the medical profession, patients suffer from stress and anxiety, which can lead to depression in the long run. Various studies have shown that stress, anxiety, and depression can suppress the immune system and make a person more susceptible to physical and mental illness. Also, patients with stress, anxiety, and depression have many problems such as disruption in playing the role of family and community, unemployment, decreased physical activity, cognitive impairment, increased risk of suicide, failure to follow treatment regimens, and decreased sexual function. Thus, spiritual health can have a great impact on controlling patients' levels of stress, anxiety, and depression by setting aim for life and promoting patients' religious insights, and people with high spiritual health can interpret life events and inconsistencies in the light of the overall meaning of life. Patients with high spiritual health cope with problems more easily and think less about the hardships of life, including illness; therefore, the risk of depression and suicide is lower among them

(25, 29).

One of the limitations of this study was the use of a self-report questionnaire, which may not reflect the actual behavior of patients and mislead the results of the study. Data collection from hemodialysis patients in only one city may also challenge the scientific validity of the study and its generalizability to the general population. Another limitation of the study was the reluctance of some patients to participate in the study, resulting in a decrease in the study population.

5.1. Conclusion

Patients with higher spiritual health scores experienced less anxiety, stress, and depression. Therefore, considering the undeniable effects of stress and anxiety control on the treatment process and adaptation to the disease, more attention should be focused on improving the spiritual health of these patients by medical staff in the process of admitting and dealing with hemodialysis patients in hospitals and medical centers. In addition, we recommend examining the relationship between spiritual health and quality of life and other psychological dimensions in a larger community of hemodialysis patients with different cultures and beliefs.

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Authors' Contribution:

A. F., writing the paper, collecting questionnaires, and translation; H. A., designing the project, writing the paper, and collecting the questionnaires; S. H. M. K., collecting the questionnaires and writing the paper; A. S., data analysis and collecting the questionnaires; M. A., collecting the questionnaires and writing the paper; A. R., designing the project, data analysis, and writing the paper.

Conflicts of Interest:

Authors declared no conflicts of interest.

Ethical Approval:

This study was approved by the Ethics Committee of Birjand University of Medical Sciences (Code: IR.BUMS.REC.1398.55).

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