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Research Article

Psychological Symptoms in Patients on Dialysis and Their Relationship with Spiritual Well-Being

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Abstract

AIM: This study was examined the prevalence of psychological symptoms in patients on dialysis and their relationship with spiritual well-being.

METHOD: This descriptive study was conducted in Iran, and the sample consisted of 150 patients on hemodialysis. The data were collected using a checklist for demographic variables; Depression, Anxiety and Stress Scales 21; and Palutzian & Ellison Spiritual Well-being Scale.

RESULTS: Among the 150 participants in this study, 57.3% were female, and the others were male. The mean age of the participants was 44.6 years. The mean scores of depression, anxiety, and stress in the studied patients were 17.3, 17.6, and 19.3, respectively. The mean of the total score of spiritual well-being was 75.02±9.1. The results showed that there was a reverse and significant correlation between the total score of spiritual well-being and the levels of stress ($r=-0.265$, $p<0.001$), anxiety ($r=-0.243$, $p<0.003$), and depression ($r -0.281$, $p<0.001$).

CONCLUSION: Depression, anxiety, and stress were highly prevalent in patients undergoing hemodialysis; all three had a strong relationship with the patients' level of spiritual well-being. In other words, patients with higher levels of spiritual well-being showed lower psychological symptoms.

Keywords: Anxiety, depression, hemodialysis, holistic nursing, spiritual well-being

Introduction

End-stage renal disease is a chronic condition in which the kidneys completely lose their functions, and the affected patient has to use an alternative treatment for the problem (Homaie-Rad et al., 2015). Like many parts of the world, the prevalence of this disease has been rising in Iran in the recent years (Mousavi et al., 2014). One of the common treatments followed, especially in Iran, is hemodialysis (Homaie-Rad et al., 2015). Although hemodialysis is considered as a common treatment in these patients, it has always been associated with some complications. Physical, mental, social, and economic problems in these patients may be increased during hemodialysis, and the patient might face major challenges and problems; one of them being psychological problems (Anjomshoa et al., 2014). Because of the importance of psychological problems, various studies have investigated the prevalence and incidence of the symptoms caused by such problems in patients on hemodialysis in Iran and worldwide. In one study, which was a systematic review study, conducted in Iran in 2017, the prevalence of depression in patients undergoing hemodialysis was estimated at 62% (Ravaghi et al., 2017).

The incidence of psychological symptoms in patients undergoing hemodialysis can be associated with some serious complications (Anjomshoa et al., 2014). Studies have shown that patients undergoing hemodialysis, who are also suffering from psychological symptoms, have less adaptation to their disease, look less for the treatment steps, and have a lower

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quality of life (Anjomshoa et al., 2014). Recognizing the factors affecting the incidence and prevalence of psychological symptoms in patients with chronic diseases is necessary for recognition, prevention, and treatment (Rafiei et al., 2017). One of the factors that have been considered as an effective factor in the incidence of disorders such as the psychological ones in recent years in patients with chronic diseases is spirituality and spiritual well-being (Rafiei et al., 2018). For instance, in one study conducted in the USA in 2007, Bekelman et al. (2007) investigated the relationship between spiritual well-being (SWB) and depression symptoms in patients with heart failure. The results of this study showed that there was a strong relationship between SWB and the incidence of depression in these patients. In other words, patients with higher SWB suffer less from depression (Bekelman et al., 2007). In another study regarding this in 2016, the relationship between SWB and the incidence of depression in patients with multiple sclerosis was investigated. The results of this study revealed significant correlation between these two and observed that patients with multiple sclerosis with higher SWB suffer less from depression (Nsamenang et al., 2016).

Although there are various studies regarding the relationship between SWB and the incidence of psychological symptoms in patients with chronic diseases, there are very limited studies regarding this in patients with chronic renal failure who are treated with hemodialysis. Therefore, our study was designed to find the responses to the following questions:

1. What is the prevalence of depression, anxiety, and stress among patients on hemodialysis?
2. What is the level of SWB among patients on hemodialysis?
3. How is the relationship between depression, anxiety, and stress and SWB among patients on hemodialysis?

Method

Study Design

This study is a descriptive study.

Sample

This study is was conducted in the hemodialysis ward of Bou-Ali Sina Hospital in Qazvin. This ward has 35 beds, and patients are admitted in 3 working shifts (morning, evening, and night). The study was conducted from November 2017 to March 2018. The proposal of this study was approved by the Research Department of Qazvin School of Nursing and Midwifery (QUMS). The sample of the study consisted of 150 patients undergoing hemodialysis who were recruited using a convenience sampling method. The inclusion criteria were being at least 18 years old, undergoing hemodialysis for at least 6 months, and the absence of mental disease detected by a physician. Patients who used medication without a definite diagnosis by a physician were not included in the study. We had about 280 patients who were eligible for participation in our study.

Data Collection

Completion of the questionnaires was done in the hemodialysis ward after the dialysis. The questionnaires were distributed among the patients by the researchers. The patients were asked to complete the questionnaires within a maximum of 1 hour and return them to the researchers who were present in the ward. If patients needed more time for completing the questionnaires, he/she received that. The researchers were present in the hemodialysis ward so as to answer any question that the participants had. The demographic data were collected by a researcher-made checklist. Depression, Anxiety and Stress Scales 21 (DASS-21) was used to examine the patients' levels of depression, anxiety, and stress (Lovibond & Lovibond, 1995). This scale is the short version of the 42-item version. DASS-21 has 21 items, and each subscale contains 7 items. Answering to the items is done on the basis of a 4-item Likert scale. The score for each item ranges from 0 to 3. The scores of all 7 items together indicate the level of depression, anxiety, and stress. Scores in the DASS-21 are needed to be multiplied by 2 to calculate the final score. Scores between 0–14, 15–18, 19–25, 26–33, and >34 indicate normal, mild, moderate, severe, and extremely severe levels of stress, respectively. Scores between 0–7, 8–9, 10–14, 15–19, and > 20 indicate normal, mild, moderate, severe, and extremely severe level of anxiety, respectively. Scores between 0–9, 10–13, 14–20, 21–27, and >28 indicate normal, mild, moderate, severe, and extremely severe levels of depression, respectively (Lovibond & Lovibond, 1995). Sahebi et al., (2005) translated DASS-21 to Farsi in 2005. They also reported good validity and reliability for this scale. Palutzian & Ellison SWB Scale was used to examine the level of spiritual well-being. This scale has 20 items and answering to these items is done on the basis of a 6-item Likert scale. The questionnaire is divided into 2 parts, and each part consists of 10 items that measure religious well-being

and existential well-being. These 20 items together make the SWB score with its range being between 20 and 120. The final scores of SWB are divided into 3 categories: low (20–40), moderate (41–99), and high (100–120) (Bokaie & Enjezabm, 2017). Rezaei et al., (2008) translated SWB scale to Farsi in 2008. They also reported good validity and reliability for this scale.

Statistical Analysis

We used the Statistical Package for Social Sciences, version 16.0 software (SPSS Inc.; Chicago,IL, USA) for data analysis. According to the normal distribution of data on the basis of the results of Kolmogorov–Smirnov test, tests including, Pearson correlation test, was performed to determine the correlation between the mean scores of depression, anxiety, and stress with the mean score of SWB, and independent *t*-test was performed to determine the differences in the mean scores of depression, anxiety, stress and SWB among male and female participants. p-Value of less than 0.05 was considered significant.

Ethical Considerations

The aims and the methods used in our study were explained to the patients before they participated in the study, and they were assured that the results of the study would be used only for the intended purposes. The patients also read and signed the participants' informed consent, which was designed by the Research and Technology Department of QUMS. In the case of more confidentiality, the enrolment of patients' names was denied, and a numerical code was assigned to each patient. At all phases of sampling, we tried to avoid the slightest disruption in the process of treatment and care of the patients participating in the study and other patients in the hospital. The research was approved by the ethical committee of QUMS (IR.QUMS.rec.1395.60).

Results

Among 150 participants in this study, 57.3% of were female, and others were male. The mean age of participants was 44.6±18.1 years. Approximately 70% of the participants in this study were pursuing diploma. Table 1 shows the patients' demographic variables in more detail.

The mean score of stress among 150 patients undergoing hemodialysis was 17.3±5.2 (without multiplying by 2), and 77.3% of the participants reported severe to extremely severe levels of stress (Table 2). According to the results of Pearson's correlation test, there was no significant correlation between the mean age of participants and the mean score of their stress (p>0.554). The mean scores of stresses in women and men who participated in the study were 20.4 and 20.6, respectively. According to the results of independent *t*-test, this difference was not statistically significant between these 2 groups (p>0.816).

The mean score of anxiety among the 150 patients undergoing hemodialysis was 17.6±5.3 (without mul-

Table 1
Patients' Demographics Characteristics

Characteristics	Value	
Age	Mean (SD):	44.6±18.1
Sex		
Men	n (%):	64 (42.7%)
Women	n (%):	86 (57.3%)
Marital status		
Married	n (%):	137 (91.3%)
Single	n (%):	13 (8.3%)
Level of education		
Under diploma	n (%):	105 (70%)
Diploma and higher	n (%):	45 (30%)
Years of hemodialysis		
Less than 1 year	n (%):	37 (24.7%)
1–2 years	n (%):	71 (47.3%)
2–3 years	n (%):	17 (11.3%)
More than 3 years	n (%):	25 (16.7%)
Having other comorbidities		
Yes	n (%):	54 (36%)
No	n (%):	96 (64%)

Note. SD: Standard deviation

Table 2
Severity of Psychological Symptoms among Patients Undergoing Hemodialysis

Severity	Stress n (%)	Anxiety n (%)	Depression n (%)
Normal	2 (1.3%)	0	0
Mild	13 (8.7%)	0	0
Moderate	19 (12.7%)	2 (1.3%)	14 (9.3%)
Severe	27 (18%)	5 (3.3%)	15 (10%)
Extremely Severe	89 (59.3%)	143 (95.3%)	121 (80.7%)

tiplying by 2). Of them, 98.6% reported severe to extremely severe levels of anxiety (Table 2). According to the results of Pearson's correlation test, there was no significant correlation between the mean age of participants and their mean anxiety score (p>0.060). The mean scores of anxiety in women and men who participated in the study were 16.9 and 18.1, respectively. According to the results of independent *t*-test, this difference was not statistically significant between these 2 groups (p>0.181).

The mean score of depression among the 150 participants of the study was 19.3±5.6 (without multiplying by 2). A total of 90.7% of the participants reported severe to extremely severe levels of depression (Table 2). According to the results of Pearson's correlation test, there was no significant correlation between the mean age of participants and the mean score of participants' depressions (p>0.468). The mean scores of depressions in women and men who participated in the study were 19.2 and 19.4, respectively. According to the results of independent *t*-test, this difference was not statistically significant between these 2 groups (p>0.871).

The mean score of SWB was 75.02±9.1. The mean scores of existential well-being and religious well-being in patients on hemodialysis who participated in the study were 38.3±4.8 and 36.3±5.8, respectively. The mean scores of SWB in women and men who participated in the study were 76.1 and 74.1, respectively (p>0.408). According to the results of independent *t*-test, there was no significant correlation between participants age and their SWB levels (p>0.468).

The results of our study revealed that there was a reverse and significant correlation between the mean score of SWB in patients on hemodialysis who participated in the study and their levels of stress (r=–0.265, p<0.001), anxiety (r=–0.243, p<0.003), and depression (r=–0.281, p<0.001). Table 3 demonstrates this relationship in detail.

Table 3
Correlation between SWB Level of Patients and Their Psychological Symptoms

	Stress	Anxiety	Depression
Religious dimension	r= –0.157	r= –0.143	r= –0.281
	p>0.056	p>0.083	p<0.012
Existential dimension	r= –0.288	r= –0.265	r= –0.272
	p<0.001	p<0.001	p<0.001
Total SWB score	r= –0.265	r = –0.243	r= –0.281
	p<0.001	p<0.003	p<0.001

Note. SWB: Spiritual well-being

Discussion

The incidence of psychological symptoms in patients with chronic diseases and their complex and long-term treatments have always been considered as a serious challenge for the members of the healthcare team. In this study, the prevalence of psychological symptoms in patients undergoing hemodialysis was investigated, and their relationship with SWB was examined. Based on the results of the study, it was observed that a large percentage of patients were suffering from psychological disorders. The results also showed that there was a strong relationship between the patients' levels of SWB and the prevalence of stress, anxiety, and depression among them (patients with higher level of SWB suffered less from depression, stress, and anxiety symptoms).

Similar to the results of our study, previous studies regarding the prevalence of psychological symptoms in patients on hemodialysis indicated a high prevalence of these symptoms in these groups of patients. However, the term depression has mostly been considered in previous studies, and less attention has been paid to stress and anxiety. A study regarding this was conducted by Khan et al. in Malaysia in which the prevalence of depression among patients undergoing hemodialysis was investigated using a prospective follow-up method in 3 visits. The results showed that more than 70% of the patients who participated in the study suffered from some levels of depression during each visit (Khan et al., 2019). Another study related to this was conducted in 2008 by Cukor et al., (2008) who investigated the anxiety level among patients undergoing hemodialysis in the USA. The results showed that nearly 46% of patients undergoing hemodialysis suffered from different levels of anxiety. The presence of multiple stressors faced by patients on hemodialysis can be a logical reason for the high prevalence of psychological symptoms among these patients. Of these stressors, restrictions on physical and daily activities, changes in physical and body image, diet limitation, dependence on the dialysis machine, lack of easy access to healthcare providers, lack of comfort during hemodialysis, frequent hospital admissions, changes

in social and family relationships, high medical and care expenses, and fear of death can be mentioned (Anjomshoa et al., 2014; Dziubek et al., 2016; Gorji et al., 2013; Partridge et al., 2011; Ok & Kutlu, 2019; Sadeghian et al., 2016).

Spirituality is considered as one of the significant mechanisms that helps to adapt to difficult and stressful situations (Martínez & Custódio, 2014; Santos et al., 2017; Taheri-Kharameh et al., 2016). The results of our study revealed that the prevalence of psychological symptoms in patients with higher levels of SWB was lower. Previous studies in this regard are very limited, and our review of literature revealed that there are 3 studies in which the relationship between the prevalence of psychological symptoms and the levels of SWB in patients undergoing hemodialysis were investigated. In one study conducted in 2014, Martínez and Custódio (2014) investigated SWB in Brazilian patients on hemodialysis and its relationship with their mental health status. They used 2 questionnaires (General Health Questionnaire and SWB Scale). Consistent with the findings of our study, Martínez and Custódio (2014) reported that there was a strong relationship between the patients' mental health status and the levels of SWB. In other words, patients with higher levels of SWB had better mental health status (Martínez & Custódio, 2014). Two other studies have been conducted in Jordan as well. In one of them conducted in 2017, the relationship between the prevalence of psychological symptoms and the levels of SWB was investigated using 2 tools that were quite similar to those used in this study. The patients who participated in that study, such as the patients in our study, were all Muslims. The results of that study were similar to the results of this study (Musa et al., 2018). In the second study conducted in Jordan, the relationship between the prevalence of depression and the levels of SWB was investigated using 2 tools that were different from those used in this study. The results of that study also revealed that there was a strong relationship between SWB and the prevalence of depression (Alradaydeh & Khalil, 2018).

SWB is one of the dimensions of health (Assarroudi et al., 2012), which has 2 dimensions itself, including religious and existential dimensions. Religious well-being refers to the satisfaction that comes from communication with a superior power, whereas existential well-being refers to the attempt of a person to find and obtain the meaning and purpose of human life (Ramezankhani et al., 2014). SWB has direct and significant effects on human health and is the core of human health (Ahmadifaraz et al., 2015), and a lot of patients know SWB as the source of meaning and purpose in their life which promotes the quality of life (Aashrafi et al., 2014). The results of this study and previous studies related to this showed that there is a strong relationship between the level of SWB and psychological symptoms in patients undergoing hemodialysis. Patients are more likely to use spirituality as a mechanism for a better adaptation to their disease. This matter should be taken into consideration by the treatment and care teams of these patients to consider necessary strategies to promote spirituality and provide spiritual care.

A convenience sampling method was one of the limitations of this study. All the participants in this study were Muslims, which could be a problem to generalize the findings in patients of other religions. We did not assess those patients who used antidepressant medications without a definite diagnosis by a physician.

Conclusion and Recommendations

Psychological problems can have negative effects on the treatment of patients on hemodialysis. Depression, anxiety, and stress were highly prevalent in patients undergoing hemodialysis, and all 3 had a strong relationship with the patients' level of SWB. In other words, patients with higher levels of SWB showed lower levels of psychological symptoms. Owing to the limited studies in this regard, further studies are recommended in Iran and other countries.

Ethics Committee Approval: This study was approved by Ethics committee of Qazvin University of Medical Science (Approval No: IR.QUMS.rec.1395.60).

Informed Consent: Written informed consent was obtained from the patients who agreed to take part in the study.

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