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PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.1098070>Available online at: <http://www.iajps.com>**Research Article****COMPARISON BETWEEN LIFE SATISFACTION, DEPRESSION,
ANXIETY, STRESS IN HEMODIALYSIS PATIENTS AND KIDNEY
TRANSPLANTATION****Babak Khodadadi¹, Seyed Hassan Niksima², Jafar Panahi³, Morteza Sagharjoghi
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Iran**Abstract**

Background and objective: *Quality of life and psychological state can be influenced by various individual and social factors, diseases and clinical situations of the individual. End-stage renal disease and its treatments present a wide range of physical and psychological problems for patients, in general, it affects their quality of life. This study evaluates and compares the state of depression, anxiety and stress in patients with hemodialysis and kidney transplantation based on demographic information.*

Methods: *In this descriptive and analytical study were compared depression, excitement and stress levels of 213 kidney patients (111 patients). Hemodialysis and 102 kidney transplants) using the DASS21 questionnaire and the data of the questionnaire were evaluated by SPSS20 software and Wilcoxon test, t-test, Mann-Whitney and Chi-square.*

Results: *Frequency of depression, anxiety and stress in the patients with hemodialysis was 92.8%, 96.4% and 83.8%, respectively. However, in the kidney transplant group, the frequencies of the variables were 94.1% for depression and excitement and 84.3% for stress. The mean score of depression, excitement and stress in hemodialysis patients was significantly higher than the kidney transplant group. There was no significant difference in the level of education and occupation with depression, excitement and stress between hemodialysis and renal transplantation groups ($P > 0.05$).*

Conclusion: *The prevalence of excitement, stress and depression in hemodialysis and transplanted patients was high, and the prevalence of these three variables was higher in hemodialysis patients with lower job and educational rank.*

Keywords: *anxiety, depression, hemodialysis, kidney transplantation, stress.*

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INTRODUCTION:

In the early 21st century, the most prominent event facing communities and healthcare workers is the increasing incidence of chronic diseases. Chronic renal failure refers to a progressive and irreversible decrease in renal function, so that the kidney is not able to maintain the internal of the body [1]. When the kidney function reaches 10-15% of normal, alternative methods will be needed. Alternative treatments attempt to compensate the normal functioning of the kidneys including hemodialysis, peritoneal dialysis and kidney transplantation [2]. Over the past 10 years, sleep disorders and the causes of its occurrence in hemodialysis patients have got the attention of many researchers. Recent studies have shown that 30-80% of these patients are suffering from sleep disorders such as awakening, Restless Leg Syndrome, late sleepiness, restlessness and drowsiness throughout the day. Also, high prevalence of sleep disorders, including apnea Obstructive Sleep Apnea (OSA) is a Periodic Movement of the Legs during Sleep (PMLS) and recurrent wakefulness and spontaneous arousals in patients treated hemodialysis has been observed. The onset of chronic renal failure and dialysis have a dramatic effect on performance and quality of life [3-6]. According to issues such as dependence on the dialysis setting, anxiety and high costs, patients often prefer to kidney transplant in order to maintain their life. Alternative treatments are not just about prolonging life and maintaining health, but also maintaining and improving quality of life. Quality of life is a strong predictor factor of death in ESRD patients and is the most important measure for expressing the outcomes and health outcomes in these patients [7]. According to the study of Overbeck et al., the SF36 questionnaire showed significant differences in 4 dimensions in both transplant and hemodialysis groups. The recipients had better physical functioning, general health, social function and physical health [8]. The aim of this study was to compare depression, excitement and stress in hemodialysis and transplanted patients based on demographic data.

METHODS:

This descriptive - analytic study was conducted for comparing the frequency of depression, excitement and stress in hemodialysis and renal transplant patients based on demographic characteristics. The study population included 111 hemodialysis patients and 102 kidney transplants in a hospital and several private clinics, then they were evaluated by accessible method. The number of samples was carried out based on studies in this field and calculated by statistical formulas.

Criteria for entering the study include aged over 18 and under 70 years of age, lack of other chronic disease (chronic illness is defined as a medical condition or a health problem that is associated with symptoms or disabilities for three months or more and may be due to congenital diseases or damage, such as types of disabilities, disabling diseases like MS, types of cancers [2], lack of specific conditions such as drug or alcohol addiction, those who are hemodialyzed twice a week, a dialysis period of more than 3 months and those who are satisfied. In the specified centers, the demographic information questionnaire and the DASS21 questionnaire were completed after explaining the purpose and methods of conducting the study for patients and their satisfaction. A number of patients were unable to complete the questionnaire, which the researcher filled out the questionnaire.

The DASS21 questionnaire is a self-assessment tool for depression, excitement and stress. The questionnaire consists of 21 questions and three equal parts (each part contains 7 questions) for each of the surveyed indicators [9]. Validity and reliability of this questionnaire were confirmed by Sahebi, Carabi and Moradi Panah et al [10, 11]. Each question is 0-3 Likert scale (the score range for each area is from 0 to 21). The method for scoring the DASS21 questionnaire is shown in Table 1.

Table 1: the method of scoring the DASS21 questionnaire

| | Normal | Mild | Medium | Severe | Very severe |
|------------|--------|------|--------|--------|-------------|
| Depression | 0-4 | 5-6 | 7-10 | 11-13 | +14 |
| Anxiety | 0-3 | 4-5 | 6-7 | 8-9 | +10 |
| Stress | 0-7 | 8-9 | 10-12 | 13-16 | +17 |

The questionnaire was analyzed using SPSS20 software. To determine the frequency of depression, excitement and stress was used descriptive statistics and non-parametric such as Wilcoxon test, T-test and for comparing two groups in terms of level of education, occupation and sex, and the frequency of depression, excitement and stress were calculated using Chi-square test with respect to normal distribution of depression, anxiety and stress based on Kolmogorov-Smirnov and Mann-Whitney tests.

RESULTS:

In this study, 213 patients were participated in the hemodialysis and kidney transplantation groups. 62.2% of the patients with hemodialysis and 77.5% of the kidney transplantation patients were men. 96.4% of the hemodialysis patients and 48% of the kidney transplantation patients were married. The mean age of hemodialysis patients and the kidney transplantation patients were 58.56 ± 8.50 and 46.96

± 7.87 , respectively, and there was no significant difference in age between the two groups ($P > 0.05$). There was no significant difference between the two groups in terms of occupation ($P > 0.05$), but there was a significant difference between the two groups in terms of sex, marital status and educational level ($P < 0.05$) (Table 2).

92.8% of the hemodialysis patients and 94.1% of the kidney transplant patients suffered from depression, 96.4% of hemodialysis patients and 94.1% of patients with kidney transplantation had anxiety, 83.8% of hemodialysis patients and 84.3% of kidney transplant patients suffered from stress.

The mean of depression, excitement and stress in both hemodialysis and kidney transplantation groups were significantly different ($P < 0.05$). As shown in the Table 3, the mean of these three criteria is higher in the hemodialysis than the kidney transplantation patients.

Table 2: Demographic data of hemodialysis and renal transplantation patients

| | Hemodialysis | | Transplantation kidney | | P |
|-----------------------|--------------|------------|------------------------|------------|-------|
| | Number | Percentage | Number | Percentage | |
| Sex | | | | | |
| Female | 42 | 37.8 | 23 | 22.5 | 0.015 |
| Male | 69 | 62.2 | 79 | 77.5 | |
| Total | 111 | 100 | 102 | 100 | |
| Marital status | | | | | |
| Married | 107 | 96.4 | 49 | 48 | 0.000 |
| Single | 4 | 3.6 | 53 | 52 | |
| Total | 111 | 100 | 102 | 100 | |

Table 3: Comparison of Mean Scores of Depression, Anxiety and Stress in Hemodialysis and Kidney Transplantation Patients

| Group Variable | Hemodialysis (Mean \pm Standard deviation) | Kidney Transplantation (Mean \pm Standard deviation) | P-value |
|----------------|---|---|---------|
| Depression | 3.24 \pm 1.3 | 3.11 \pm 1.18 | افسردگی |
| Anxiety | 3.55 \pm 1.04 | 3.51 \pm 1.06 | هیجان |
| Stress | 2.95 \pm 1.50 | 2.67 \pm 1.48 | استرس |

To compare the relationship between gender and depression in hemodialysis and kidney transplantation patients, 97.6% of women and 89.9% of men in hemodialysis patients, 95.7% of women and 93.7% of men in kidney transplantation had depression. All women and 94.2% hemodialysis men, 95.7% women and 93.7% kidney transplantation men had anxiety and there isn't a significant difference between two groups ($P > 0.05$).

Comparing the association of education with depression, anxiety and stress in hemodialysis and

kidney transplantation patients, a higher percentage of university graduates in both groups suffered from depression and anxiety that only there was a significant difference in terms of education and excitement in the transplantation patients group ($P < 0.05$). In terms of stress, the less percentage of educated people suffered from stress and there was no significant difference between two groups ($P > 0.05$).

To compare the relation of job with depression, anxiety and stress in hemodialysis and kidney

transplantation patients, 20% of hemodialysis workers and 50% of military kidney transplantation were normal in depression and anxiety, 30% of those with a free job in the hemodialysis group and 50% of military personnel in the kidney transplantation were normal, but there was no significant difference between the hemodialysis and kidney transplantation groups ($P > 0.05$).

Comparing the relationship between marital status and depression, anxiety and stress in hemodialysis and kidney transplantation patients, 92.5% of the married patients and 89.8% of the married kidney transplantation suffered from depression, while all single individuals in both groups have depression, 96.3% of married women with hemodialysis and 89.8% of married kidney transplantation individuals were in a better position than the singles in both groups, 83.2% and 90% the married hemodialysis patients and kidney transplantation suffered from stress, respectively. While all single hemodialysis patients were stressed, the singles in the kidney transplantation group were in a better position than the married couple, and only 88.3% of them suffered from stress, there was no significant difference between two groups ($P > 0.05$).

DISCUSSION

This study showed that depression, anxiety and stress in hemodialysis patients were far higher than that of kidney transplantation patients. Therapeutic goals have evolved in patients with chronic kidney disease over time, so that at first the goal was only to maintain and survive, then to maintain functional status, to control signs and quality of life in a single patient, to improve the quality of life in different dimensions, and ultimately maintaining the quality of life associated with health and patient-centered [12]. Although the recent studies have shown that kidney transplantation reduces the amount of depression, anxiety and stress, but there is still a dilemma.

According to the findings, there is no statistically significant difference between the two groups in terms of mean age which is consistent with the study of Mollahadi et al. in Iran, but contradicts with the study of Sayin et al. in Ankara, Ogutmen et al. in Istanbul and Fujisawa et al., in Japan [13-15]. The two groups had statistically significant difference in terms of sex, marital status and educational level, while in the study of Jofer et al., the comparison groups were not significantly different in terms of sex ratio [8, 16]. Several factors, such as depression, anxiety and stress, have contributed to the development of kidney disease based on the studies conducted [11]. Different studies have reported different results for depression, anxiety and stress in

kidney patients. According to Hedayati et al., 21% of hemodialysis patients suffer from severe depression [17]. Like in this study, both Akman et al. and Alavi et al. reported depression in kidney transplantation patients less than hemodialysis patients [18, 19]. Many researchers also showed high levels of anxiety and depression in kidney transplantation patients, which was also clearly identified in this study. In relation to stress, different results have been reported. Based on the results of a study, stress was increased at the waiting time for getting kidney transplantation [20]. According to the results of this study, 83.8% and 84.4% of the patients with hemodialysis and kidney transplantation were stressed respectively, which showed a significant degree of stress in both groups in comparison with the study of Rahimi et al., which 36.6% of the hemodialysis patients suffered from stress was more [11].

One of the ways of differentiating this study with the studies that has been done so far is to study the effect of education and occupation on increasing or decreasing depression, anxiety and stress in hemodialysis and kidney transplantation patients. According to the results, military and retired people in the hemodialysis patients group and farmers, livestock and retirees in the kidney transplant group had the highest rates of depression, anxiety and stress. Also, in terms of educational level, laboratory experts and masters in hemodialysis patients, and the laboratory experts of transplantation patients had the highest rates of depression, anxiety and stress.

CONCLUSION:

Depression, anxiety and stress were very common in hemodialysis and kidney transplantation patients, and they were much higher in hemodialysis patients. Therefore, it can be said that occupation, education level and gender were also important factors in the level of depression, anxiety and stress in kidney patients. Although it is easy to detect depression, stress and anxiety with a questionnaire, it is necessary to diagnose and identify mental problems and treat them in these patients. In addition, teaching methods for controlling and preventing depression, anxiety and stress is recommended for these patients.

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