Comparison of anxiety, depression and stress among hemodialysis and kidney transplantation patients

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Abstract

Aims: Chronic and debilitating diseases have numerous psychiatric consequences. Renal diseases and as its consequences dialysis and kidney transplantation, strongly affects physical and mental health of patients. The aim of this study was to compare anxiety, stress and depression among hemodialysis and kidney transplantation patients.

Methods: In a descriptive-comparative study, 147 hemodialysis and 146 kidney transplantation patients were selected by purposeful sampling method from one hospital and some private clinics of Tehran in 2009. The equipment of measuring psychological signs in patients was “21questioned depression, anxiety and stress scale” (DASS21) standard questionnaire. Data was analyzed by using SPSS 17 software and Chi square and Man-Whitney tests.

Results: 63.9% of hemodialysis patients had anxiety, 60.5% had depression and 51.7% had stress. Meanwhile, in kidney transplantation group they were 48.6, 39 and 38.4%, respectively. The mean score of anxiety and depression in hemodialysis group was significantly more than kidney transplantation group, but there was no significant difference in stress field score.

Conclusion: Prevalence of anxiety, depression and stress is high in hemodialysis and kidney transplantation patients and it is higher in hemodialysis patients.

Keywords: Stress, Depression, Anxiety, Hemodialysis, Kidney Transplantation

Introduction

Chronic and disabling diseases have numerous psychiatric consequences. So, mental disturbance incidence is common as a consequence of physical diseases [1]. Chronic renal failure is a progressive and irreversible destruction of renal function. Main treatment of end stage renal disease is dialysis and finally renal transplantation [2].

The number of patients with chronic renal failure is doubling every seven years [3]. More than 60 thousand people around the world die due to renal diseases annually [2]. The available statistics in Iran shows the dramatic growth of chronic renal failure disease so that the whole dialysis patients in Iran have been 8500 people in 1381 [3]. The statistics of hemodialysis patients is increasing about 15% annually in Iran [4]. According to available statistics, up to 2008 more than 24 thousand people in Iran will be suffering from chronic renal failure [5]. Of which, 48.5 % are treated with renal transplantation, 48.3% with hemodialysis and 3.2% of them with peritoneal dialysis [6].

Dialysis is a stressful process and follows various psychological and social problems which can lead to patients’ mental disturbances. More study of results shows the high prevalence of psychological and social disturbances in dialysis patients [1]. Based on the results of Nazemian et al. study on the relationship between depression rate and stress of dialysis patients, 64.5% of patients suffer from depression, 51.4% from explicit stress and 49.7% from hidden stress [7]. Salehi considers that 50% of the dialysis patients suffer from depression which is 33.3% have mild depression, 15% moderate depression and 1.7% severe depression [8]. Most studies have pointed out that the most common symptoms of mental disturbances in dialysis patients is depression, then stress [1].

Each of the two main treatments, i.e., hemodialysis and renal transplantation have various and particular complications and can give rise to psychosocial and social problems [9]. In year 2000, about 15 thousand renal transplantations have been performed in the U.S., Europe and Asia [10]. This figure has been about 21,728 cases until 2006 in Iran [6]. General health status of kidney recipients generally is better than dialysis patients and the possibility of employment and starting of normal daily activity is higher in them [11]. The prevalence of mental disturbances before transplantation is reported to be 11.1% and two months after transplantation 36.1%. Totally, the feeling of anxiety and depression is very common in renal patients [9]. In Doubles et al. study on depression in kidney recipients that was done on 47,899 people (1995 to 2003), 3360 patients were reported to be depressed after 3 years [12].
Comparison between anxiety, depression and stress in hemodialysis and kidney transplantation patients

Research in 2006 in Tehran, the rate of depression in kidney transplantation patients was similar to hemodialysis patients [9]. These show the importance and necessity of finding the scientific and practical ways in order to deal properly with psychological problems, especially depression in dialysis and renal transplant patients, and management of the disease [13]. The aim of this study is to determine the rate of depression, anxiety and stress and comparing it in hemodialysis patients and kidney transplantation recipients.

Methods

Present study is a descriptive-comparative research. In this study, 147 hemodialysis patients and 147 renal transplant patients in one hospital and several private clinics were selected and studied by available method in Tehran in 2001. Sample size was calculated based on the studies which were done in this field and by statistical formula. The inclusion criteria were having at least 18 years old, Iranian citizenship and the minimum interval period of 2 months after the dialysis onset. In the specified centers, after explaining the aim and methods of conducting the study for patients and obtaining their conscious consent, demographic information questionnaire and DASS21 questionnaire were completed for them. If the patients were not able to complete the questionnaire in any way, the researcher himself completed the questionnaire for them. One of the transplanted patients was excluded from the study due to mental disease. DASS21 questionnaire is the self-assessment tool of depression, anxiety and stress. This questionnaire includes 21 questions and three equal parts (each containing 7 questions) about each studied indicators [14]. Validity and reliability of this questionnaire was confirmed by Sahebi [15], Moraqebati, Moradi-Panah et al. [16]. Any question has Likert scale 0 to 3 (the range of the score of each area from zero to 21). The scoring procedure of DASS21 questionnaire has been shown in Table 1 [17].

Data was inserted to SPSS 17 statistical software and Chi square test was used for data analysis and with regard to the abnormal distribution of depression, anxiety and stress, based on the calculations of Kolmogorov-Smirnov statistical test, Mann-Whitney statistical test was used.

Results

51.7% of hemodialysis patients and 63.7% of renal transplant patients were male. Mean age of hemodialysis patients was 53.13± 14.15 years and mean age of transplanted patients was 39.36±11.72 years. 60.5% of hemodialysis patients and 39% of dialysis patients were suffering from depression, and 63.9% of hemodialysis patients and 48.6% of transplanted patients were suffering from anxiety, and 51.7% of hemodialysis patients and 38.4% of renal transplant patients were suffering from stress (Table 2).

Table 2- Frequency distribution of depression, anxiety and stress in hemodialysis and renal transplantation patients

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Normal</td>
<td>39.5(58)</td>
<td>61(89)</td>
<td>36.1(53)</td>
<td>51.4(75)</td>
<td>48.3(71)</td>
</tr>
<tr>
<td>Mild</td>
<td>9.5(14)</td>
<td>13(19)</td>
<td>15(22)</td>
<td>20.5(30)</td>
<td>17.7(26)</td>
</tr>
<tr>
<td>Medium</td>
<td>32.7(48)</td>
<td>10.3(15)</td>
<td>15.6(23)</td>
<td>7.5(11)</td>
<td>13.6(20)</td>
</tr>
<tr>
<td>Severe</td>
<td>5.4(8)</td>
<td>8.9(13)</td>
<td>10.2(15)</td>
<td>5.5(8)</td>
<td>12.9(19)</td>
</tr>
<tr>
<td>Very severe</td>
<td>12.9(19)</td>
<td>6.8(10)</td>
<td>23.1(34)</td>
<td>15.1(22)</td>
<td>7.5(11)</td>
</tr>
</tbody>
</table>

Significance level: p<0.001 p<0.01 p>0.05
Numbers in parentheses are the number and the numbers outside parentheses are percentage.

Hemodialysis patients were significantly more depressed (p<0.001) and anxious (p<0.01) than renal transplant patients, but about the stress, there was not any statistically significant difference between the two groups (p>0.05; Table 3).

Table 3- Comparison of the mean of depression, anxiety and stress scores in hemodialysis and transplantation patients

<table>
<thead>
<tr>
<th>Group Variable</th>
<th>Hemodialysis (Mean±SD)</th>
<th>Renal transplantation (Mean±SD)</th>
<th>Level of significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>6.76±4.998</td>
<td>4.78±4.577</td>
<td>p&lt;0.001</td>
</tr>
<tr>
<td>Anxiety</td>
<td>6.07±4.630</td>
<td>4.55±4.235</td>
<td>p&lt;0.004</td>
</tr>
<tr>
<td>Stress</td>
<td>7.85±5.108</td>
<td>6.95±5.276</td>
<td>p&lt;0.05</td>
</tr>
</tbody>
</table>

Discussion

This study showed that anxiety and depression in hemodialysis patients is significantly higher than the transplant group, but in terms of stress variable, no significant difference is observed between two groups. Anxiety and depression in chronic diseases like end-stage renal failure are common symptoms; these diseases can lead to hospitalization and ultimately death [18, 19]. Despite the progress in field of chronic
renal failure treatment, these patients still suffer from many problems and authorities believe that several factors such as stress, depression and anxiety play a role in the incidence of these problems [16]. In different studies, different and various results have been reported for the rate of stress, depression and anxiety in this group of patients. Based on the study of Hedayati et al., 21% of hemodialysis patients suffer from severe depression [19]. According to Akman et al. study, renal transplantation patients had less depression compared to dialysis patients [20]. Alavi also shows that renal transplantation patients have less depression and stress compared to hemodialysis patients [21]. In general, studies show that 20 to 30% of patients with chronic renal failure are suffering from depression. This statistics of depression rate is higher in other chronic diseases, like chronic heart failure (14%) and coronary artery diseases (16%). Studies done using self-assessment tools in patients with chronic renal failure estimates the rate of depression 15 to 60% [22]. Some researches show the high levels of anxiety and depression in renal transplant patients. Perez et al. report the depression and anxiety in renal transplant patients after passing of one year after the transplantation more than before [23]. Based on the results of a study on 71 transplant patients, the rate of severe depression in these patients is less than other chronic diseases like thalassemia and hemophilia [24].

Regarding stress, the results are also different. Based on the results of a study on 47 male and 24 women candidate for renal transplantation, their stress is increased within the waiting time for receiving the transplant kidney [25]. According to Rahimi et al., 30.6% of hemodialysis patients are suffering from stress [16], but the results of this study do not show any significant difference in terms of stress in both groups.

Conclusion
Depression, anxiety and stress in hemodialysis and renal transplantation patients have a high prevalence and especially are higher in hemodialysis patients. The difference in the rate of stress is not significant in both groups. Although a definitive diagnosis of anxiety, depression and stress needs accurate psychiatric studies, however, rapid and accurate diagnosis of psychological problems and its treatment in these patients seems necessary. In addition, teaching the methods of control and prevention of depression, anxiety and stress to these patients is recommended.

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References
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