

Prevalence of anxiety and depression in Iranian kidney transplant recipients

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ABSTRACT

الأهداف: تقييم مدى انتشار الاكتئاب والقلق بين الإيرانيين الذين خضعوا لعملية زرع الكلية.

الطريقة: تم إجراء هذه الدراسة المقطعية في مركز شيراز لزراعة الأعضاء بجامعة شيراز للعلوم الصحية، شيراز، إيران وذلك خلال الفترة من سبتمبر 2006 إلى يونيو 2007 م. لقد قمنا بتقييم حالات الاكتئاب والقلق بين المرضى الذين خضعوا لعملية زرع الكلية و كانوا يراجعون المركز للمتابعة. شملت الدراسة 109 ذكوراً و 91 أنثى من خضعوا لهذه العملية، وكانت أعمارهم تتراوح ما بين 17-73 عاماً مع معدل عمر يصل إلى 39.64 عاماً (انحراف المعياري = 12.85). قمنا بتحليل حالات كافة المرضى باستخدام الاستفتاء المصحّح به والذي يُسمى اختبار بيك الاختياري لتقدير الاكتئاب (Beck Depression Inventory)، واختبار بيك الاختياري لتقدير القلق (Beck Anxiety Inventory).

النتائج: أظهرت النتائج بأن 75% من المرضى كان يعاني من الاكتئاب و 50% يعاني من القلق وذلك من أصل 200 مريض. وارتبط كلاً من الاكتئاب والقلق بالعوامل المتغيرة التالية: ماهية المتبرع (حيث، ميت، قريب، ليس قريب)، مدة الغسيل الكلوي قبل عملية الزرع، المدة التي تلحق عملية الزرع، ورفض الجسم للعضو سابقاً.

خاتمة: تشير الدراسة بأن نسبة انتشار الاكتئاب والقلق بين المرضى الذين خضعوا لعملية زرع الكلية تعد عالية، ولذلك يجب إجراء التقييم النفسي وجعله جزء لا يتجزأ من العمليات التحضيرية قبل عمليات التبرع والزرع، كما يجب الاهتمام بالمرضى الذين عانوا سابقاً من رفض أجسامهم للعضو المتبرع به وذلك لأنهم يعانون من المشاكل النفسية أكثر من غيرهم. وتعد ماهية المتبرع من العوامل الضرورية التي تؤثر على المرضى الذين خضعوا لعملية زرع الكلية.

Objectives: To evaluate the prevalence of depression and anxiety in Iranian patients receiving a kidney transplant.

Methods: A cross-sectional study was undertaken in Shiraz Organ Transplant Center, Shiraz University

of Medical Sciences, Shiraz, Iran between September 2006 and July 2007. We evaluated depression and anxiety in renal transplant recipients who had a follow-up appointment scheduled. The study participants consisted of 109 male and 91 female renal transplant patients, age ranged from 17-73 years with a mean age of 39.64 years (SD = 12.85). All patients were assessed using validated Beck Depression Inventory and Beck Anxiety Inventory.

Results: Out of 200 patients, 75% showed depression and 50% had anxiety. Among variables, donor type, pretransplant dialysis period, posttransplant period, and rejection had a significant relationship with depression and anxiety.

Conclusion: The frequency of depression and anxiety is high in renal transplantation. Psychiatric evaluation should be a routine part of most pre-transplant candidacy workups. Transplant patients with a history of rejection should receive more attention for psychiatric problems. The type of the graft donor was also found to be an important factor affecting anxiety and depression in renal transplant patients.

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End stage renal disease (ESRD) is one of the chronic diseases with high prevalence in Iran (253 per million population). Of these patients, 52% undergo hemodialysis, and 47% are treated by transplantation.¹ Renal transplantation is the treatment of choice for ESRD. The prevalence of major depression or a defined psychiatric illness in ESRD patients is unknown, but

is probably between 5-10%.² In comparison with hemodialysis, kidney transplantation produces greater improvements in quality of life due to being less stressful, causing fewer life style restrictions, and leading to a general improvement in physical and psychosocial well-being.^{1,3,4} Patients health-related quality of life (HQoL) has been considered to be a treatment goal in addition to survival.^{5,6} Research shows that patient's HQoL improves during one year after successful renal transplantation. Depression and other mental disorders may complicate many chronic diseases. In kidney transplant recipients, depression is likely to be the most common psychopathology associated with increased morbidity and mortality.⁷⁻⁹ During the early years of post-transplant (the period on which most work has focused to date) patients are challenged with many stressors including possible graft loss, change in body image, psychosocial challenges, and side effects of immunosuppressant medication.² Depression after transplant continued for a long time in more than half of the cases.¹⁰ Anxiety is short-lived and usually related to concerns of rejection during the early period.⁷ In the present study, we selected a representative sample of kidney transplant recipients to ascertain the prevalence, clinical characteristics, and key risk factors for anxiety and depression after transplantation. Compared to hemodialysis, renal transplantation was significantly more effective in improving all 3 domains, particularly general overall quality of life and physical functioning.³

Methods. A cross-sectional study was undertaken in Shiraz Organ Transplant Center, Shiraz University of Medical Sciences, Shiraz, Iran between September 2006 and July 2007. We evaluated depression and anxiety in renal transplant recipients who had a follow-up appointment scheduled. Fasa University of Medical Sciences is located in Fars Province. Shiraz is the capital of Fars province, and the only transplant center in this province is the Shiraz Organ Transplant Center. We chose our patients among those referred to Shiraz Organ Transplant Center. The study participants consisted of 109 male and 91 female renal transplant patients. Written informed consent was obtained from each participant. The study was approved by the Institutional Review Board, Fasa University of Medical Sciences, Fars, Iran. Patients with possible neurological damage (head trauma, degenerative, vascular or metabolic disorders, neoplasm, or toxic exposure), history of major substance abuse, or major psychopathology were excluded from the study.

Data were collected using a questionnaire and were divided into 2 parts. The first part of the questionnaire covered demographic information of the participant such as age, gender, marital status, education level,

characteristics of the disease, duration of the disease, and socio-economic status. The second part of the questionnaire covered the Persian version of Beck's Depression Inventory (BDI), which was translated and validated by Ghassemzadeh et al.¹¹ Patients completed the Beck's questionnaire in 15 minutes, and whenever needed, the correspondent attendant provided appropriate answers. In the case of illiterate patients, the questions were read to the patients and the answers were entered into the questionnaire. Beck's standardized questionnaire scores were defined as follows: symptom-free (0-15), mild depression (16-30), moderate depression (31-46), and severe depression (47-63).¹² All patients were also assessed using Beck Anxiety Inventory (BAI). Two hundred forms were analyzed for the presence of anxiety and depression and correlations between variables such as age, gender, marital status, educational level, employment status, presence of chronic rejection, source of organ (living related, living unrelated donor, and cadaver) and duration of functional graft.

Statistical analysis. Statistical analysis was performed using the Statistical Package for Social Sciences (SPSS Inc, Chicago, IL, USA) PC Version 16.0. We used Kolmogorov Smirnov test to obtain the normal distribution of cases. T-test and one-way analysis of variance was performed for all categorical variables. The significance level was set at $p<0.05$.

Results. Out of 200 patients (age range 17-73 years [SD=12.85]), 155 were married, 42 were single, 2 were divorced and one widow (Table 1). The demographic details of the kidneys recipients are summarized in Table 1. Two types of kidney transplantation were performed; living and cadaver. One hundred and fifty patients (75%) were depressed (cut-off score of 10 on the BDI) and 100 patients (50%) had anxiety (cut-off score of 16 on the BAI). Among the patients that suffered from anxiety:

Table 1 - Kidney recipient's data (N=200).

Characteristics	n (%)
Age range (years)	17 - 73
<i>Gender</i>	
Male	109 (54.5)
Female	91 (45.5)
<i>Marital status</i>	
Married	155 (77.5)
Single	42 (21.0)
Divorced	2 (1.0)
Widow	1 (0.5)
<i>Educational level</i>	
Illiterate	35 (17.5)
Educated	165 (82.5)
University	28 (14.0)
Non-University	137 (68.5)
Mean length of dialysis before transplant (months) (mean±SD)	18.82±12.88

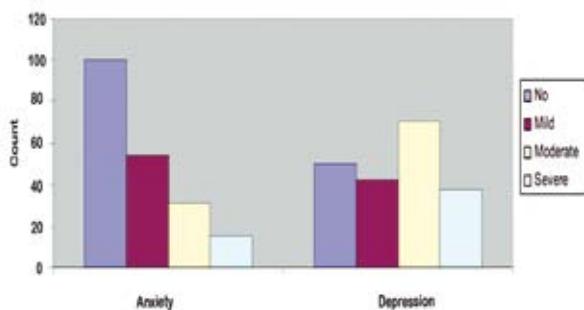


Figure 1 - Prevalence of different anxiety and depression scores in recipient groups.

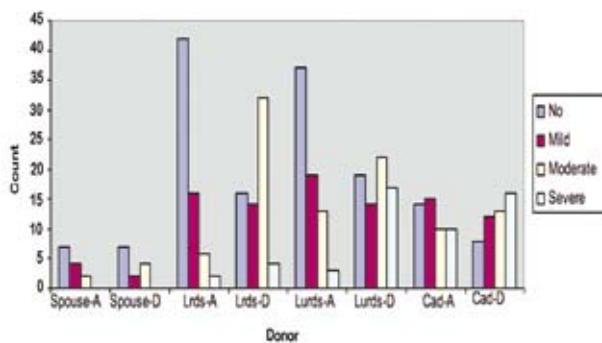


Figure 2 - Anxiety (A) and depression (D) related to different donor groups. Lrds - living related donor's, Lurds - living unrelated donors, Cad - cadaver

27% had mild anxiety, 15.5% had moderate anxiety, and 7.5% had the highest level of anxiety (Figure 1). Among depressed patients, 21% had mild depression, 35.5% showed moderate depression, and 18.5% had the highest level of depression (Figure 1). Before kidney transplant surgery, the length of dialysis had a significant relation to levels of anxiety and depression. Recipients with longer periods of dialysis before transplant showed higher scores of depression ($p=0.001$) and also higher scores of anxiety ($p=0.001$). The history of graft rejection had a significant relationship with depression ($p=0.019$), but it was not true for anxiety. Donors had a significantly higher frequency of depression ($p=0.003$) and anxiety ($p=0.001$). Severe depression and anxiety were observed in recipients of cadaveric donor kidneys, and the less depression and anxiety was seen in patients with spouse donor. The patients with a longer post transplant period who were enrolled in the study showed higher levels of depression ($p=0.02$) and anxiety ($p=0.009$). None of the socio-demographic variables such as educational level, marital status, and age significantly influenced the depression and anxiety scores.

Discussion. In this study, we investigated how kidney recipients responded mentally to their transplant, and we found a high prevalence of depression and anxiety in renal transplant recipients. Our results are in agreement with those from previously published studies.^{7,13} After kidney transplant surgery, patients face many new challenges such as living with fear of rejection, the need to acquire new self-care skills, recognizing the signs and symptoms associated with impending infection and rejection, and the need to comply with a complex regimen of immunosuppressive therapy, which may generate distressing side effects.¹ In our study, we found positive correlations between longer period of dialysis before transplant and scores of depression ($p=0.001$) and anxiety ($p=0.001$). Other studies show no correlation between duration of illness and psychiatric symptoms.^{2,13} This difference may be due to low coping skills in our patients that warrant psychological intervention. We also note that more depression and anxiety were observed in recipients from cadaver donors versus spouse donors (Figure 2). In cadaveric kidney transplant recipients, a sense of guilt and/or self-blame and the feeling of having a piece of a dead person in his body is one of the causes of a high prevalence of depression and anxiety. The lowest level of depression was seen in patients with spouse donors, due to emotional support from their spouse and the feeling of being loved by their spouses who altruistically donate their kidneys. Comparing various types of donor, some studies were in concordance and some are in contrast with our findings.¹³⁻¹⁶ With emphasis on donor-recipient as an interactive pair instead of donor may explain these differences. Another explanation is lack of consensus regarding the structure and method of psychosocial assessment in living kidney donors.¹⁶ Anxiety disorders have been studied in less detail than depression in transplant populations, and a shortcoming of many investigations, including the present one, is that the complete range of anxiety disorders were not evaluated.^{17,18} The fact that our sample met or exceeded lifetime rates in other studies mostly in the first years after transplant attests to the impact of the transplant experience and its potential as a stressor.^{13,19}

The limitation of this study is the cross-sectional design and the collection of data. There is no control group for comparison of patients' awareness and psychological status before transplantation.

In conclusion, the prevalence of depression and anxiety is high in renal transplantation. Psychiatric evaluations should be routinely conducted as a part of pretransplant recipient workup. Patients with a history of rejection after renal transplantation need more attention. The type of the graft donor is also an important factor affecting anxiety and depression in renal transplant patients. Future study is required

to clarify the effect of psychiatric background and social context as predisposing factors. Also by using standardized structured interviews instead of self-administered instruments, we can avoid underestimating the prevalence of psychiatric disorders.

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