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Effect of kidney transplantation on quality of life measures*

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Abstract. Assessing the quality of life should be an essential part of the long-term results of surgery, particularly for those procedures that may influence a patient's lifestyle and body image. Eliminating the need for dependence on chronic hemodialysis, kidney transplantation improves the patient's autonomy but exposes them to the side-effects of immunosuppression and the constant threat of rejection. The purpose of this study was to compare the quality of life of patients on the waiting list for a kidney transplantation to that of those already transplanted at our Center to quantify carefully the impact of this therapy on the patient's physical, emotional, and social well-being. Computer analysis of the data collected from self-administered questionnaires revealed that the vast majority of successfully transplanted patients experience a significant improvement in almost all the areas investigated compared with the pretransplant group. In addition, we tried to use the questionnaire to predict which type of patient will adjust more fully to the impact of a kidney transplantation and which will probably need posttransplant psychological care and social support. Aside from clinical factors such as the time spent on hemodialysis before transplantation, the gender, the age, as well as the source of the organ (living vs. cadaver donor) seem to play a role in the final outcome of a successful kidney transplantation.

Key words: Quality of life – Kidney transplantation – Health status measurement

Over the past 10 years the results of kidney transplantation have improved dramatically. However, even when kidney function is excellent and the patient is discharged from the hospital in a few weeks, the posttransplant medical regimen can be stressful, and patients may report side-effects attributable to the immunosuppression that have the potential to compromise their quality of life. Patients with a successful transplant may also experience difficulty in resuming their role in society, particularly after many years of dialysis. Although other studies have documented that patients adapted to the impact of a kidney transplantation such that lifestyles, although altered, were not impaired [1, 2, 7], it has been suggested that behavioral and cultural differences between the patient populations of different countries can considerably affect the results of the quality of life surveys [4]. Our purpose, therefore, was to compare the quality of the lives of patients on chronic hemodialysis with that of patients after a successful transplant performed at our Center. The need for such a study was felt since this is to our knowledge the first on this subject conducted in our country.

Patients and methods

Data were collected by sending self-administered questionnaires with multiple-choice questions to 81 patients who had undergone a kidney transplantation at our Center between 1982 and 1990 and to 271 patients maintained on hemodialysis while on the waiting list for a donor. The questionnaire was a transcultural version of that designed by Simmons and others at the University of Minnesota to assess the quality of life in uremic and transplant patients [8]. Items in the questionnaire were categorised into three major dimensions: physical well-being, emotional well-being, and social well-being. Within each dimension, particular subdimensions were measured with multiple-choice questions and with scales and scores constructed from the multiple-choice questions. These measures were chosen because they had been used in similar research projects [9] where they proved to be reliable and valid health tests for chronically ill patients and therefore could provide a basis for future comparisons. The exact instrument along with its reliability and validity information has been previously reported [8]. As an additional investigation, we tried to use the questionnaire to detect which patients will adjust more fully to the kidney transplant and, which is perhaps the most crucial point, which ones will need greater posttransplant psychological care and social support. For this purpose, the relationship between age, sex, education, time spent on dialysis, and type of donor (living vs. cadaver), and the emotional and social well-being scores was analyzed.

The Student's t-test was used to test for significant differences between the groups. For data that did not fit the assumption required for a t-test, χ^2 analysis was performed. P values less than 0.05 were chosen for statistical significance.

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Results

Out of 352 sent by post, 243 questionnaires returned to the Center for analysis: 172 from patients on dialysis (63% answer rate) and 71 from transplant patients (88% answer rate). There was no significant difference between the two groups in regard to the following variables used to check for comparability: age, sex, education, marital status, and time spent on dialysis.

The physical well-being dimension was designed to assess the level of health improvement and refers to the patients' evaluation of their health and to the level of physical activity possible given their physical condition [3]. Not surprisingly, posttransplant patients have fewer physical problems than patients on chronic hemodialysis (Table 1). In addition, patients were asked how often they encountered problems with symptoms of uremia and whether all uremic symptoms had been considerably reduced, or if they had any difficulty with a list of ordinary life activities. Some patients still have difficulty with walking, climbing stairs, and lifting things. In general, the posttransplant patient showed an important health improvement, to the point that 42% could say their health was not a problem, in comparison with only 9% of the pretransplant group, and 53% classified themselves as, "I am well and doing the same things I did before my illness" compared with 18% in the pretransplant group.

More than with physical well-being, a successful transplant leads to a dramatic improvement in the patients' self-esteem, as well as in all the other subdimensions of emotional well-being, including a reduction in anxiety and feelings of depression (Table 2).

The last dimension, social well-being, refers to a general satisfaction and participation in social activities and life roles such as job, friends, and family adjustment. There was evidence of a statistically significant improvement in 2 subdimensions out of 4 (Table 3). Our data indicate that the patient after transplant appears to be socializing more with people outside the family. However, only 18% of patients classified themselves as very satisfied with their job, compared with 9% of those on chronic hemodialysis. A lack of suitable job opportunities in our country could be responsible for the low numbers in both cases: It indicates that transplant patients tend to remain unemployed even when they are able to work again.

Male patients showed some tendency to be better adjusted after transplant, the low anxiety score achieving statistical significance (Fig. 1). However, it should be noticed that considering the general population, women are more likely to score lower than men in this area [8]. Among the other possible explanations, is the impact of body-image upon these areas: More than one-third of patients reported having a "fuller face" and abnormal hair growth, characteristic of immunosuppression. As expected, these problems of unattractive appearance were reported by about 50% of women and by less than 20% of men. Considering age, although with no statistical significance, there seems to be a tendency for younger patients to be less accepting of health problems after transplant. Education might be expected to make a difference, too, meaning that higher education could be associated with fewer rehabilitation problems. Our data, however, showed no consistent differences considering patients after transplant with less or more than 8 years of school. Looking at the time spent on dialysis before transplant, there is some evidence that patients who have been on dialysis for less than 1 year, with a higher level of emotional well-being pretransplant, are more likely to remain better adjusted after transplant if compared with long-standing dialyzed patients, reaching statistical significance on the self-esteem score. Finally, our data suggest that recipients of cadaver kidneys show a greater emotional adjustment after transplant, probably because of fewer problems in the relationship with the donor as compared with living related donors (11 patients in this study) [6].

Table 1. Physical well-being analysis results

Subdimensions	Mean scores	
	Pretransplant	Posttransplant
Health satisfaction	2.76	4.22*
Physical well-being summary[a]	12.38	11.81
General well-being[a]	7.45	5.56*
Domosthings	4.74	5.33

[a] Lower scores reflected better well-being
* two way analysis of variance: $P \leq 0.05$

Table 2. Emotional well-being analysis results

Subdimensions	Mean scores	
	Pretransplant	Posttransplant
Self-esteem scale	3.18	5.14*
Index of depression	1.39	2.84*
Index of anxiety	1.47	2.47*
Independence	2.04	2.47*
Control over destiny	1.75	2.58*
Positive affect scale	5.30	7.42*

* Two-way analysis of variance: $P \leq 0.05$

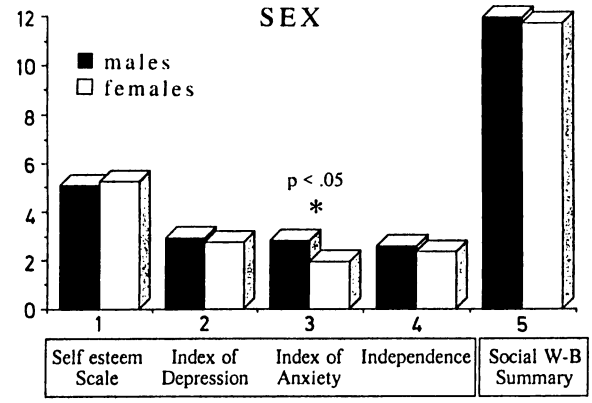
Table 3. Social well-being analysis results

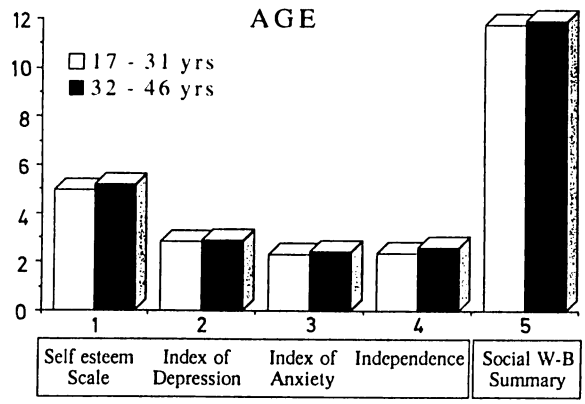
Subdimensions	Mean scores	
	Pretransplant	Posttransplant
Social well-being summary	10.79	11.87*
Family well-being summary[a]	10.24	11.07
Social role satisfaction[a]	4.32	4.29
General satisfaction	11.76	8.60*

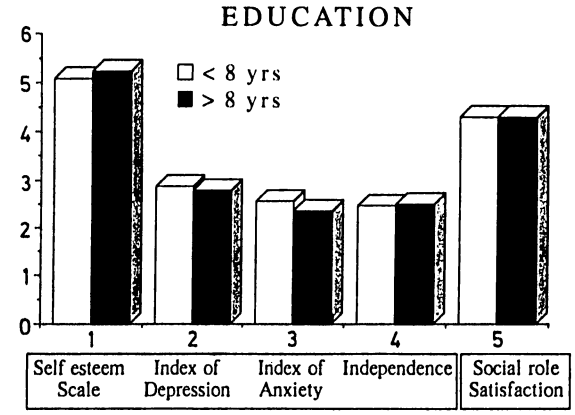
[a] Lower scores reflect better well-being
* Two-way analysis of variance: $P \leq 0.05$

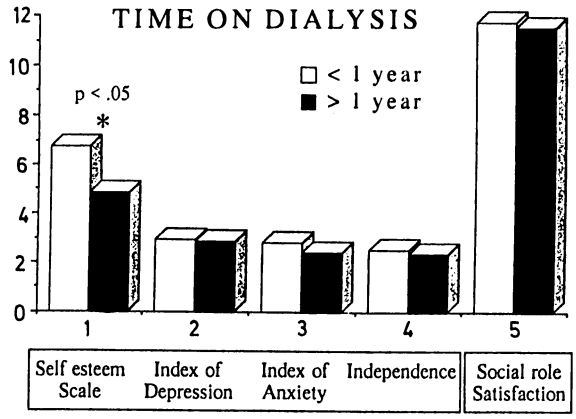
Discussion

Quality of life variables are rarely considered as outcome measures in controlled trials of surgical treatment [5, 10, 11]. The purpose of this study was to document the quality of life of kidney transplant patients versus dialysis patients in our geographical area. Our results provide further evidence that patients receiving a successful kidney transplant have a higher quality of life as measured subjectively by physical, emotional, and social well-being. It is known that the quality of life may also vary depending on the immunosuppression therapy; however, most of the patients in-









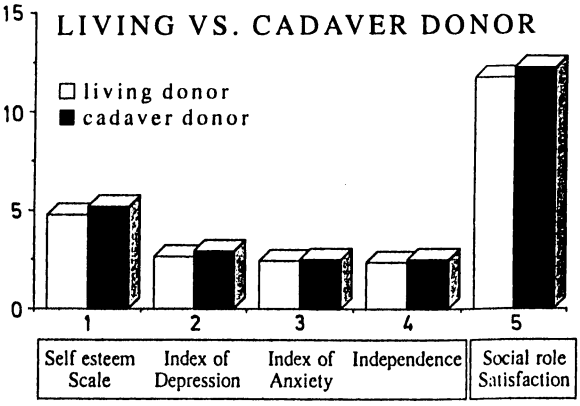


Fig. 1. Relationship of transplant patients' variables to emotional and social well-being scores

cluded in this study received triple-drug therapy, and it was therefore impossible to distinguish separate subgroups.

Our analysis suggests that some patients are more likely to benefit from psychological support in the posttransplant period: women, young people, those who spent a long time on dialysis, and living related recipients.

Although clinical considerations will always be the main determinant of the decision-making process in surgery, we believe that quality of life information is also needed by both surgeons and patients in selecting the most appropriate therapy for each case and to guide health policy decisions [10].

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