

## Psychiatric and psychological evaluation in living donor kidney transplantation: a single center experience

### Articoli originali

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#### ABSTRACT

**Background:** Living donor kidney transplantation (LDKT) is the treatment of choice for end stage renal disease. LDKT involves complex psychosocial issues, which remain partially unexplored.

**Methods:** The study involved all potential living donors and recipient pairs consecutively referred for psychosocial evaluation from the nephrologist. Clinical and sociodemographic variables including prior psychiatric history, previous and current use of psychopharmacological therapy, motivation and information about the transplant procedure were collected. Study participants completed the Symptom Checklist-90-R (SCL-90-R) to assess psychopathological distress.

**Results:** Fifty-three donor/recipient pairs underwent psychiatric and psychological evaluation. Seven subjects (13%) in the recipient group and 13 subjects (25%) in the donor group reported a history of psychological distress and/or psychiatric conditions. A psychiatric diagnosis was confirmed in 4 recipients (7.5% of the study sample, including autism spectrum disorder, histrionic personality disorder, and anxiety-depressive disorders) and 5 donors (9%, including narcissistic personality disorder in one case and anxiety-depressive disorders). SCL-90-R GSI mean scores were  $0.3 \pm 0.3$  and  $0.2 \pm 0.2$  for the recipient and donor groups, respectively. Overall, 8 couples (15%) suspended the living donation pathway before transplantation. Four couples were excluded for a new onset medical condition. The psychological and psychiatric evaluation excluded one candidate. One couple dropped out before completing the scheduled exams. One recipient refused to undergo crossover renal transplantation, while 1 donor candidate withdrew her consent for transplantation at the end of the evaluation process.

**Conclusions:** Limited but significant psychopathological distress in donors and recipients supports the usefulness of psychiatric and psychological competencies within the transplant team.

**KEYWORDS:** living donor kidney transplantation, psychiatric disorders, psychological distress

## Introduction

Living donor kidney transplantation (LDKT) is a well-established treatment for end stage renal disease, in terms of recipient's survival and quality of life [1]. LDKT is a complex procedure that raises psychological and ethical issues. More than 30% of living donations come from biologically unrelated donors, mainly partners or friends with a longstanding emotional connection to the recipient [2]. International guidelines clearly recommend a detailed psychosocial evaluation including the assessment of a donor's psychological status, their motivations, knowledge and expectations about transplant and donation, and the potential for undue emotional pressure to donate [3–5]. Indeed, the safety and wellbeing of living donors represents a high priority in organ transplantation.

Psychosocial evaluation represents an important step for both the patient and the donor, to be added to the large number of exams required to assess the donor's suitability for organ donation.

The accurate selection of recipient and donor candidates is essential for a good outcome throughout the entire transplant process [3–6]. Of note, recipients' pre-dialysis adverse psychosocial conditions have been associated to an increased relative risk of post-transplant death [6]. Moreover, the literature suggests that it is fundamental to investigate psychopathological aspects, including personality traits, and the relationship dynamics of the donor/recipient couple, as well as to assess family dynamics and the wider social context in terms of subsequent support. These aspects are crucial both in the pre- and post-transplant period, leading to more in-depth evaluation and limiting post-transplant negative outcomes in terms of quality of life [7,8].

Despite the recent development of specific assessment tools, to date there are still large differences in screening practices and a limited use of standardized protocols and validated questionnaires [8–9]. To our knowledge, and in contrast with the large body of international literature investigating the psychosocial aspects of LDKT, there is currently very limited epidemiological data on the type and timing of psychosocial evaluation in Italian transplant centers.

The purpose of this study has been to describe the psychological and psychiatric characteristics of a consecutive sample of donor/recipient couples who were candidates for living donor kidney transplantation in a single center.

## Patients and methods

The present cross-sectional, observational study included all potential living donor and recipient pairs consecutively referred from the nephrologist for psychosocial evaluation for LDKT from January 2014 to January 2019. Inclusion criteria were age (>18-year-old) and the ability to give informed consent. Both donor and recipient underwent a detailed psychiatric and psychological interview by a senior psychiatrist to exclude any major psychiatric disorder.

The clinical interview was based on diagnostic criteria from the Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM 5) [10]. Personality disorders were investigated through the Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID II) [11]. The presence of self-reported psychopathological distress was investigated through the Symptom Checklist-90-R (SCL-90-R). This questionnaire contains 90 items measuring nine primary symptom dimensions. This test, sufficiently reliable and valid, is widely used and is designed to provide an overview of a patient's symptoms and their intensity at a specific point in time. The subscales assess somatization, obsessive-compulsive symptoms, interpersonal sensitivity, depression, anxiety,

hostility, phobic anxiety, paranoid ideation and psychoticism, whereas the global severity index (GSI) is designed to measure overall psychological distress. Higher scores indicate more psychological symptoms in each subscale, as well as a higher degree of distress. A GSI score  $\geq 1$  suggests psychopathological impairment deserving further investigation [12].

Sociodemographic, clinical and psychopathological variables including prior psychiatric history, previous and current abuse of tobacco and other substances, previous and current use of psychopharmacological therapy were collected as part of the usual assessment, in addition to the motivation for and information on the transplant procedure. Patients gave informed consent for their data to be anonymously collected and used for scientific purposes, according to the policy of our institution.

Continuous variables were described as means and standard deviations (SD), while categorical variables were described as numbers and percentages. All calculations were carried out using the IBM SPSS Statistics 21.0.

## Results

### Sample characteristics

Fifty-three donor/recipient pairs underwent psychiatric and psychological evaluation for LDKT. Thirty donors (57%) were married to the recipient or in a common law partnership with them, 13 (25%) were parents, 8 siblings (15%). In one case the donor candidate was the recipient's mother-in-law and in another her aunt. Sociodemographic and clinical characteristics of donor and recipient candidates are shown in Table I.

		Recipients (N=53)	Donors (N=53)
<b>Age, mean <math>\pm</math> SD</b>		46 $\pm$ 12	52 $\pm$ 9
<b>Gender (female), n (%)</b>		12 (23)	38 (72)
<b>Country of origin, n (%)</b>	Italy	42 (79)	42 (79)
	Other	6 (11)	6 (11)
<b>Relationship, n (%)</b>	Spousal/partner		30 (57)
	Parent		13 (25)
	Sibling		8 (15)
<b>Education, n (%)</b>	$\leq 8$ years	30 (57)	23 (40)
<b>Employment, n (%)</b>	Employed	29 (55)	32 (60)
	Retired/disability pension	9 (17)	8 (15)
	Other	18 (34)	13 (25)
<b>Childhood onset disease, n (%)</b>		8 (15)	
<b>Dialysis, n (%)</b>		21 (40)	
<b>SCL-90 GSI, mean <math>\pm</math> SD</b>		0.3 $\pm$ 0.3	0.2 $\pm$ 0.2
<b>Previous psychiatric/psychological history, n (%)</b>		7 (13)	13 (25)
<b>Current psychiatric diagnosis, n (%)</b>		4 (7.5)	5 (9)
<b>Current psychopharmacological treatment, n (%)</b>		2 (4)	5 (9)
<b>Referral for psychological/psychiatric support, n (%)</b>		9 (17)	7 (13)

**Table I: Clinical and socio-demographic characteristics of all donor/recipient candidates at entry into the living kidney donation evaluation protocol**

Twenty-one patients (40% of the study sample) were receiving dialysis at the time of evaluation, while 10 (19%) started it during the evaluation period or later, prior to transplantation.

### Psychiatric and psychological evaluation

SCL-90-R GSI mean scores were  $0,3 \pm 0,3$  and  $0,2 \pm 0,2$  for the recipient and donor groups, respectively. Only 2 subjects in the recipients' group, and none of the donors, scored  $\geq 1$ .

### Evaluation of recipients

Among recipients, 3 subjects (6%) scored  $\geq 1$  on the SCL-90 somatization subscale, 3 (6%) on the interpersonal sensitivity subscale, 3 on the depression subscale (6%), 3 (6%) on the paranoid ideation subscale. Seven subjects (13%) in the recipient group reported a previous psychiatric diagnosis: 1 for high-functioning autism spectrum disorder, 1 for personality disorder, 4 for anxiety disorder and 1 for depressive disorder, all with good control of symptoms at the time of evaluation.

### Evaluation of donors

In the donor group, 4 subjects (7.5%) scored  $\geq 1$  on the depression subscale, 3 (5.6%) scored  $\geq 1$  on the paranoid ideation subscales, 2 (3.7%) on the somatization subscale and 2 (3.7%) on the interpersonal subscale.

Thirteen subjects in this group (25%) reported a history of previous psychological distress and/or psychiatric conditions. In detail: 7 participants (13%) reported a history of major depression treated with antidepressant medications; 6 subjects experienced anxiety disorders, 1 treated with benzodiazepines, the others through psychotherapy. All of them were referred for a detailed psychiatric evaluation.

The diagnosis confirmed a current psychiatric distress and/or condition in 5 donors (9%). One subject with no previous psychological/psychiatric history presented personality and mood features deserving of further in-depth investigation. The clinical assessment confirmed the diagnosis of narcissistic personality disorder. The candidate showed a persistent marked ambivalence towards donation and a documented substance use (cocaine). The evaluation led to his exclusion from donation.

Out of the 7 potential donors with a history of major depression, 4 had completely recovered years before the current investigation. Two subjects were still in pharmacological and psychological treatment at the time of the evaluation, with a satisfactory control of symptoms and a solid psychosocial support system. One patient reported persistent depression and anxiety. Temporarily excluded from donation and referred for adequate outpatient psychiatric and psychological support, he requested a new evaluation one year later and, after a detailed assessment, was declared eligible.

Eight couples in total (15%) suspended the living donation process before transplantation. Four couples were excluded for a new onset medical condition. The psychological and psychiatric evaluation excluded 1 candidate, as discussed before. One couple dropped out, interrupting the psychological and clinical evaluation before completing the scheduled exams. Two couples declined to undergo living kidney transplantation after completing the evaluation, due to the candidate's refusal: in one case the recipient specifically refused to undergo crossover renal transplantation; in the other, the donor declined due to recently emerged interpersonal problems with the recipient.

Overall, psychiatric diagnoses in the recipient and in the donor group required several consultations (3-5 for recipients, 2-6 for donors). As for time, cautious psychological and psychiatric evaluation required 1 month on average, while 2 particularly complex situations required subsequent re-assessment over one year.

Psychological and psychiatric support, or its continuation when already active, was suggested to 9 people (17%) in the recipient group and 7 (13%) in the donor group, with regular feedback from and coordination with the Transplant Center team (Figure 1)

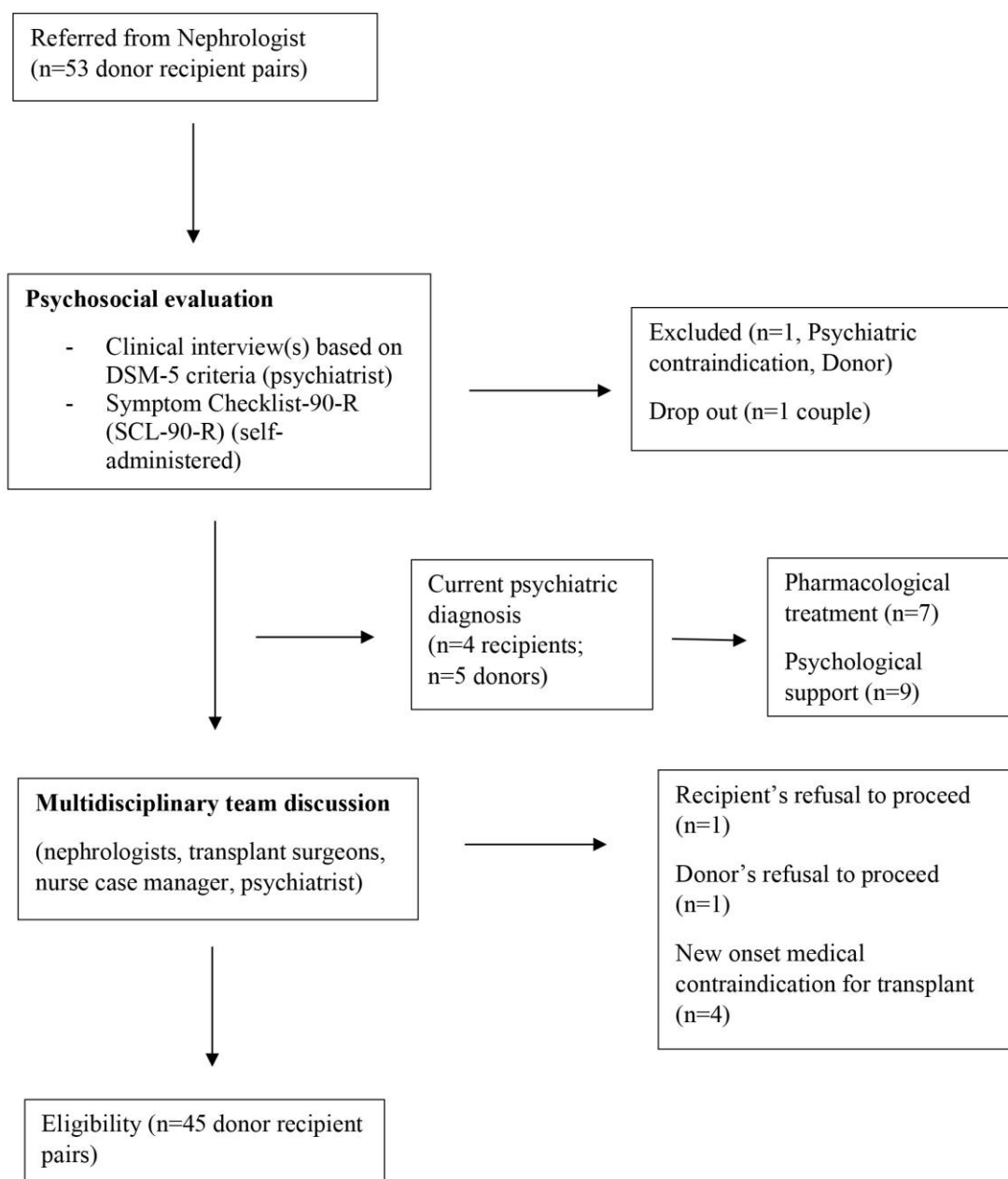


Fig. 1: Psychosocial evaluation flow chart

## Discussion

In our sample of 53 consecutive donor/recipient pairs, 4 recipients (7,5%) and 5 donors (9%) presented a diagnosis of current psychiatric issues. SCL-90-R GSI mean scores were close to those reported by control groups in other clinical settings [13].

In the recipient group, 2 people were diagnosed with autism spectrum disorder and histrionic personality disorder respectively, while sub-threshold depressive symptoms, reported at SCL-90 subscale, were the most represented among donors.

In recent years, a growing body of research shows that even severe mental illness, including psychosis or severe mood disorders, does not necessarily affect post-transplant outcome and compliance if adequate psychiatric and psychosocial support is available prior and after the operation, to help patients cope with the stress of the procedure and adhere to the follow-up care [14].

In the Renal and Lung Living Donors Evaluation (RELIEVE) Study, a large investigation evaluating medical and psychosocial outcomes of living kidney donors, depression was the most common pre-existing psychiatric condition and was reported by 8% of donors, in line with our findings [15]. In the same study, 11% of donor respondents reported that they had been treated for psychological problems prior to donation [15], compared to 26% in our study sample. Previous studies in donor/recipient couples undergoing living renal transplantation found higher levels of depression in recipients (ranging from 16% to 38.7%) compared to donors (12.6%-16.3%) [16,17]. The lower rate of anxiety and depression reported in our recipient group might be partially explained by methodological issues – such as relying on clinical interviews and not on patients' self-assessment, as in other studies – and clinical differences between study samples. Of note, 40% of transplant candidates in our study were receiving dialysis, compared with 91% in other studies [16].

The psychological and psychiatric evaluation plays a major role in discriminating the severity of depressive symptoms, as well as the donor's awareness and motivation about donation. Identification and treatment of major depression is crucial since a history of depression at the time of donation is associated with later psychological impairment [15]. Moreover, previous studies raised the concern that living donors, rather than being driven by altruistic reasons, may decide to donate with feelings of ambivalence, or in response to family pressure or personality traits [18]. Recent research has focused on a more in-depth investigation of living donors' personality profiles [13,18]. Interestingly, De Pasquale et al. found that narcissistic personality, histrionic personality and schizoid personality are the most representative patterns of personality in a sample of 32 potential kidney donors [18]. In our study sample, the only candidate excluded from donation was diagnosed with narcissistic personality disorder. These findings are particularly important since personality features, potentially affecting the decision to donate, are often egosyntonic and not recognized as problematic by the subject himself. A careful psychiatric assessment that includes personality traits appears to be necessary.

In our study, the participants with a pre-transplant psychiatric diagnosis were referred for further psychological/psychiatric evaluation during the follow-up period. Two recipients showed recurrence of anxiety in the first year after transplantation and were treated with psychotherapy. All donors with a pre-transplant psychiatric diagnosis showed a good psychological adjustment following donation. Results from large, multicentric studies will help to clarify donors' psychosocial outcomes after kidney donation [19].

The pre-transplant evaluation is not a linear path. Eight couples (15%) in our sample did not achieve living kidney transplantation. Previously unknown clinical problems may emerge in the

recipient or in the donor in every phase of the evaluation process, making the whole process emotionally stressful and potentially uncertain [20].

Finally, it is important to note that the current study presents important limitations: the small sample size and the descriptive cross-sectional design do not allow a generalization of the results. Also, we did not specifically investigate genetic risk factors for psychological/psychiatric distress in donor and recipients and did not employ a transplant-specific questionnaire. However, the single center design guarantees that clinical management was uniform and provide a “real life” approach. The use of validated assessment instruments was integrated by clinical interviews performed by a psychiatrist with specific expertise in the field. Finally, the use of a dyadic approach, comparing simultaneously psychosocial aspects of donors and recipients, may represent a promising area for further research.

## Conclusions

The finding of limited but significant psychopathological distress among donors and recipients supports the usefulness of psychiatric and psychological competencies within the transplant team, both in the pre- and post-transplant period. Given the complexity of the entire transplant process and the multiple variables to consider, a multidisciplinary approach is essential [5]. In our view this would help rationalize hospital resources and competencies, ultimately optimizing transplant outcomes.

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