

**THESIS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY (PHD)**

**Investigation of transplant attitudes among patients with chronic renal  
failure**

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# **Investigation of transplant attitudes among patients with chronic renal failure**

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The Examination takes place at Department of Preventive Medicine, Faculty of Public Health, University of Debrecen, 16<sup>th</sup> April, 2019, 11 am

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The PhD Defense takes place at the Lecture Hall of Bldg. A, Department of Internal Medicine, Faculty of Medicine, University of Debrecen, 16<sup>th</sup> April, 2019, 1 pm

## INTRODUCTION

Chronic renal failure is a *major public health problem worldwide*. In Hungary, the number of chronic patients in need of artificial respiration, as in the case of industrialized countries, increases year by year. The condition of patients with chronic renal failure deteriorates over time, so that end-stage renal disease is treated. These therapies include hemodialysis, peritoneal dialysis and transplantation. Choice of them can be influenced by a number of factors. Despite the fact that transplantation is the most optimal solution for both life expectancy and quality of life, many patients still reject this treatment. Although the domestic programs have started to evolve - more and more transplants are performed and the number of live-donated kidney transplants increases - however, despite many benefits of transplantation, many patients are still opting for dialysis. In order to keep pace with developing medical science more and more patients receive the best treatment for them, it is important to assess the attitudes and attitudes of patients in relation to the various procedures. This allows you to map the points where the psychologist can provide the most effective help in the healing process.

## BIBLIOGRAPHICAL REVIEW

Chronic kidney failure is *irreversible* constraint on the functioning of the kidneys, and the final stage is end-stage renal failure, which, in the absence of renal replacement, is a life-incompatible condition. Renal impairment is required in patients with end-stage renal insufficiency. Renal replacement treatment is a procedure that is intended to replace kidney function. Treatment of end-stage chronic renal insufficiency basically involves *two types of kidney replacement therapy*:

- *dialysis* (hemodialysis and peritoneal dialysis) and
- *transplantation* (cadaver donor, living donor).

The purpose of *dialysis* is to sort the fluid and electrolyte balance and remove urine toxins. In the case of *hemodialysis*, detoxification is performed by a machine, and during *peritoneal dialysis*, the patient's own peritoneal membrane is used for detoxification.

The kidneys carry many vital tasks, the replacement of which is not sufficient for dialysis alone. However, as a result of *transplantation*, the implanted kidney performs not only the detoxification and the regeneration of salt water, but also produces hormones, participates in metabolic and hematopoietic regulation. The success of organ transplantation is influenced by several medical factors. The primary consideration is recipient and donor human leukocyte antigen (HLA) match, but other factors related to the donor's history are also important. During transplantation, permanent immunosuppressive therapy is used to prevent rejection of the implanted kidney.

### **The psychological factors behind chronic renal failure**

The role of psychological factors in the process of transplantation is indisputable. Numerous studies address the influence of the psychological factors observed during each phase of the kidney transplantation process. Some studies seek to find psychological factors that promote the success or failure of transplantation, while some others measure the prevalence of certain psychological problems among kidney patients.

Despite the importance of the subject, there is little evidence available in the international literature on assessing *attitudes of patients*, although beliefs related to the disease are also *predictors of mortality* and the effect of these consciousness factors is similar in terms of outcome as clinical parameters and comorbidity. Disease views and attitudes are predictable in terms of recovery and survival, as well as a strong predictor of waiting lists for waiting lists, such as assessing and correcting attitudes during a pre-dialysis analysis.

With regard to attitudes towards transplantation, most research attempts to reveal the donor's knowledge of kidney transplantation and donation. A similar type of examination of recipients is still not common internationally.

Numerous researches deal with revealing the feelings of the recipient donor that describe the *ambivalent feelings* of the transplant patient. He is happy to receive the donor organ for him, but faces the emotions of the unknown donor and the loss of his own bad functioning body, accompanied by a mourning. The origin of the body is concerned with the patients, they are interested in the characteristics and features of the donor. Several studies have shown that patients are experiencing guilt about the deceased donor, which is extremely difficult to report.

Thus, the unconscious conflict often resides in fantasy activities. The line of ambivalent feelings is unavoidable after transplantation, which may result in a variety of psychological symptoms.

Some of the research aims to get acquainted with the concepts of living donor transplantation. Most of them report that a large number of recites reject the possibility of living donor transplantation, the main motives of which are the worry of the other party and the torturing sensation of indebtedness. In many cases, taboo has the option of living donor kidney transplantation.

Some of the research aims to get acquainted with the concepts of living donor transplantation. Most of them report that a large number of recites reject the possibility of living donor transplantation, the main motives of which are the worry of the other party and the torturing sensation of indebtedness. In many cases taboo is the option of living donor renal transplantation. In end-stage renal disease, depression is one of the most common psychological disorders. Due to the high prevalence of depression and the morbidity and mortality associated with depression, depression screening is the primary treatment process for patients. However, symptoms are often not recognized, so patients do not have the opportunity to apply the appropriate treatment.

Several comparative studies are comparing groups of renal patients along the scale of *depression*. Most people reported depression after transplantation, and patients with dialysis generally found higher depression.

The presence of depression is in itself a dangerous factor, but it has been associated with many patients in the kidneys. One of the most important observations is the correlation between patient collaboration and depression. Comorbid depression affects the patient's ability to work with treatment regimens.

Based on the results of a study, the correlation between depression and nonadherence is primarily due to the feeling of hopelessness. In addition to affecting co-operation, comorbid depression clearly undermines the patient's quality of life.

Most illnesses affect the patient's ability to limit him to important activities. The degree of *disease burden* is determined by various psychosocial factors, in addition to the disease itself and the possibility and mode of treatment.

Practically all renal replacement treatments have a major influence on the patient's daily lives, which significantly damages the patient's quality of life.

Patients receiving various types of kidney substitution face a variety of stress sources and losses: their family role changes, their physical and cognitive abilities decrease, and various types of sexual dysfunction occur.

Patients on hemodialysis need to be treated on a weekly basis, requiring continuous management and strict compliance. In transplant patients, fear of rejection is the most common source of stress.

The status of patients with chronic renal failure progresses over time, so end-stage renal replacement therapy is performed. Many patients have doubts about kidney transplantation. Behind this phenomenon are psychological factors, beliefs and feelings about transplantation. Landreneau and his colleagues pointed out that a decision-making on the choice of appropriate treatment is lacking in the literature, but its necessity is indisputable.

In the last decade, there is an increasing interest in studies on *decision-making on the choice of replacement therapy*, but very little data has been provided since the early diagnosis. Studies come mainly from North America and Central Europe, and most of all are from the examination of dialyses. Most of the studies relate mainly to the effects of dialysis, primarily in terms of quality of life.

In *Landreneau's* investigation, he found that rejection of transplantation has a major role to play in fearing the patient and meeting with unsuccessful cases. Most of the recipients reject the possibility of living-donor transplantation because of the disturbing feelings of concern, guilt and indebtedness of the other party. Numerous scientific literature confirms that patients' knowledge is often misleading, medically inaccurate, which also determines how to decide on renal replacement therapy. Vámos et al., In his study of patients with dialysis, found that renal transplant recipients are expected to experience unfavorable health status after transplantation and have more false information. Many people think that transplantation is more expensive than hemodialysis, and they are afraid of complications, assume that their quality of life will deteriorate after the transplant. Patients often do not know whether they are on the queue or even know about the process of queuing. Many people think that access to the waiting list is preceded by dialysis, so patients' knowledge of preemptive transplantation is also incomplete.

## **PRESENTATION OF THE RESEARCH**

### **Objective**

The purpose of our research is to explore the *attitude of renal patients to kidney replacement treatments*, to understand the attitudes and knowledge content of treatment acceptance or rejection in patients with chronic kidney disease. The main purpose of our research is to find out the psychological factors involved in the choice of modality of renal replacement therapy.

To approach our goal, we developed an attitude questionnaire that was used with three groups of patients: end stage renal disease, dialysis and transplantation. With this *attitude*, the transplantation and dialysis patients are compared, along with obstacles to deciding on transplantation, the emotions, *fears and beliefs* that explain the rejection of the most optimal treatment procedure. In addition, we investigated the extent of depression and disease burden, which may also influence the decision on treatment, the healing process. Our further aim is to identify *misdiagnosed information* about the illness and recovery of patients who are preventing the decision on transplantation, so correcting them later may be the subject of various psychological interventions.

Our research objectives were implemented in two steps. In the framework of a pre-examination we have created an attitudinal questionnaire that can be used to describe the cognitive and emotional attitude of the kidneys to their illness and to measure scales. In the second step, in the main study, we measured the degree of disease burden and the development of depression in the attitudes of patients with their disease and recovery.

### **Preliminary: developing an attitude questionnaire**

In order to construct a questionnaire to examine the attitude towards transplantation, we prepared semi-structured interviews with transplanted and transplant patients (23 persons), whose narrative material was analyzed by content analysis for major narrative content units and content categories. Subsequently, the individual content was judged by independent persons that there is cognitive - emotional coherence between them and can be grouped into unified content groups.

We generated attitudinal questions from the content, and then we were subjected to a clinical trial. The patient had to decide on a *5 degree Likert scale* to agree with the question. The questionnaire was tested with 62 transplant patients.

The results were subjected to statistical processing, thus leading to the typical variants of transplantation attitudes, based on which the responses of the transplanted patients were arranged into meaningful categories.

As a result of the main component analysis, we received an eighty-factor attitudes questionnaire consisting of 85 items:

- 1. The belief in healing*
- 2. Diarrheal effects on life quality*
- 3. Mistrust of transplantation, rejection*
- 4. Anxiety about preparing for transplantation*
- 5. The difficulty of accepting sickness and transplantation healing*
- 6. Fears related to live donor transplantation*
- 7. Acceptance of transplantation*
- 8. Curiosity for the dead donor*

## **Main Investigation**

In our main study, our attitude questionnaire was supplemented with the Beck Depression Questionnaire and the Disease Weid Index to measure the disease burden.

Our questionnaire was packed with predialyzed patients, dialysis patients and people who had already undergone transplant surgery at five different locations:

- *University of Debrecen, Institute of Surgery, Transplantation Center*
- *FMC DC Debrecen*
- *No. 10. B.Braun Avitum Dialysis Center, Debrecen*
- *FMC DC Miskolc*
- *No. 2. B.Braun Avitum Dialysis Center, Nyíregyháza*

### ***Description of the test sample***

Our study included 285 *kidney patients* (99 *predialyzed*, 99 *dialyzed*, 87 *transplanted*). The average age of patients was 54 years (standard deviation: 14,58 years, gender distribution was proportional (128 women, 157 males), and our questionnaires were mainly completed by *primary and secondary school* students.) In most of the *cases of disability pensioners* participated in our research, about 50% of our sample.

Of the 285 *patients*, 106 *patients* undergoing dialysis treatment, ie *unsuccessful kidney transplantation*, eight transplant patients were re-dialyzed. Most dialyzers receive hemodialysis treatment, only ten patients have opted for *abdominal dialysis*. Patients have been receiving kidney replacement for many years. 42,4% of dialyzers said they did not even offer the possibility of transplantation. By contrast, only 22,4% of transplant recipients said they had not been offered kidney transplantation before. This highlights distortion among patients: dialysis patients find that they *have no choice in transplantation*. Nevertheless, dialysates proved to be the most well-known in the kidney transplantation procedure, most of them said they received sufficiently satisfactory information about transplantation.

The majority of transplant recipients *have undergone cadaver donor kidney transplantation*. Kidney patients prefer cadaver donor transplantation and, in conjunction with the literature, *live donor transplantation* is rejected. *Most kidney transplants are successful*, as most transplant recipients have had *no rejection response since surgery*.

### ***Presentation of test instruments***

*Transplant Attitude Questionnaire* (see preliminary examination)

*Beck Depression Questionnaire Shortened Version* (*Beck Depression Inventory*)

The Beck depression questionnaire is used for screening of the currently existing depressive symptoms and measures its severity. The abbreviated form of a depression measurement questionnaire measures the presence of depression by answering *nine statements on a quadruple Likert scale*.

### *Disease Index*

*Illness affects the patient's lifestyle by restricting him to activities that matter to him, and directly affects the quality of life through the disease. The Disease Disease Index 13 item for measuring the disease burden measures the effect of the disease on daily life, and its scoring is 1 to 7 points on a Likert scale.*

*Questionnaire for measuring disease-related knowledge (19 questions)*

*Disease characteristics data*

*Socio-demographic data*

### **Data processing**

Our preliminary questionnaire was used in our main study on three sub-samples. For this, it was necessary to isolate the attitudes typical of the sub - samples, which differentiated the factor structures with *two sample T-tests*, and thus general and specific attitudes could be described. Differentiating attitudes point to the specific characteristics of disease states, while common attitudes describe the general characteristics of kidney disease. Thus, we created the factor structure of different attitudes between the common and the disease groups, along with two factor structures.

*Discrimination analysis* was then used to describe the disease family in the three groups and to investigate the factors with psychological indicators. The results of the discriminant analysis were combined with the ANOVA assay and the results obtained were verified by the T-test for each pair of differences. The discriminant analysis, the ANOVA test, and the T test were also performed for trained groups to choose or choose transplantation.

During the analysis of *socio-demographic* factors, correlation was calculated to describe the *correlation* between the variables and the direction of the relationship. For normal distribution variables, a comparison of the mean of two samples was performed using a *T-test* or a *Welch-test*, while the comparison of two more averages was performed using variance analysis. For comparison of two group samples for non-normal variables, *Mann-Whitney*, *Kruskall-Wallis* probes were compared for more than two samples.

## Results

In our research, the *common attitudes* of all renal diseases describe the general characteristics of renal disease, and the *different attitudinal* contents show the characteristics of each disease stage.

### ***Description of general attitudes and psychological characteristics of kidney diseases***

Disturbance caused by the disease is commonly characterized by all patients. Dialysis is mostly neglected, and all three groups of patients have the formative effect of dialysis. At the same time, in their thought, transplantation appears as a *positive* option, to which the *confidence of the doctor* is associated. There are many doubts about attitudes to illness in the form of a surgical procedure (*surgical risk*) and *negative attitude* towards the donor person. Donor-related feelings generally characterize patients, *donor-related anxieties* are often portrayed to the donor's personality, interest in the donor's personality, and guilt as a result of a rejection of the new kidney, leading to the *rejection of transplantation*.

Individual *social demographic* factors influence the development of attitudes. We found a significant correlation between the factors of age and transplant attitudes, which suggests that, although age advances, patients are more likely to believe in the treatment of a specialist, they still accept kidney transplantation less, and also deny their own role in the healing process. Anxiety in the donor's affiliation appears to be denied to the donor and refuses the transplant procedure along the donor-related emotions.

*Gender differences* were also identified for our attitudes during our study. Although women have implanted new kidneys, they are less committed to their role in healing, while their donor-related anxieties manifest themselves in the interest of the donor.

Regarding the transplantation attitudes, we encountered a negative attitude among the *pensioners* and the *unemployed*. The highest degree of surgical fear is characterized by the unemployed, but they are most reliant in their recovery. Faith in their recovery is the least commonplace for disability pensioners, and their own responsibility and self-esteem in their recovery is denied.

Based on our results, *education* facilitates the acceptance of transplantation. Higher education is regarded as a general psychosocial defensive factor, which is supported by the results of our research. Patients with lower levels of education are more uncertain about their illness, are less distrustful in their recovery, and are less able to assume their own responsibility.

Our results indicate that 39% of 285 patients showed *depression* based on the BDI questionnaire. Using correlation calculations, we studied the relationship between *depression* and *attitudes*. Depression is predestination of the loss of faith in healing. A patient with depressive symptoms is less likely to believe in transplant healing, which can be *identified as a sign of hopelessness*.

For *socio-demographic* factors, *lower age, employment and education* are the main factors for depression: the lowest level of depression in younger, more experienced and higher educated patients.

For the disease burden, 39,6 mean points were measured on the whole assay sample. When investigating the relationship between *disease burden* and *attitudes*, we have found that a greater burden of disease correlates with the uncertainty caused by the disease, and we have observed the disturbance of the doctor and the effects of the disease burden and the dialysis quality of life.

*Socio-demographic* factors also influence the development of the disease burden. Between the disease burden and the patient's relationship was observed. The burden of disease was the highest in disability patients, while among the full-time workers we found the lowest value.

### ***Describe the attitudes and psychological characteristics of the three group of patients***

Significant differences in renal disease and significant differentials found on the differentiating factors were used to describe the features characteristic for each patient group.

The most significant doubts and anxiety were detected in the **predialyzed patients**, in which case we had a particularly *negative attitude* towards transplantation. In the case of pre-diagnosed patients, the fear behind the procedure increases their distrust and at the same time keeps personal responsibility for recovery, that is, *self-incapacity*.

Transplantation has a fear full of vision, so acceptance of the *new kidney is hindered*, they least accept the idea of having a *foreign organ* in their body. Because of anxiety caused by fear of a full vision, the subjective illness of dialysis is the highest in their case. In their case, belief in recovery is *growing unrealistically*, as they still hope to be able to heal without fearful treatments. *Depression* (28.3%) and *disease burden* (36.8) were found to be the lowest in the patients who were *prediluted*.

Regarding the relationship with disease and healing, we also encountered a negative attitudes in **dialysis patients**. The idea of transplantation for the dialysed patient is getting closer and the fear in this is manifested in the *attitude of vulnerability* to the new kidney: the sense of restriction is linked to the dialysis by implanting the new organ. They have *lost their faith in healing*, and their hopelessness comes to the fore, resulting in the less negative process of dialysis, which is a limitation, but essential to the vitality of their dialysis. Meanwhile, they deny their responsibility for their healing, their self-interest. The principle of cognitive dissonance reduction can also be explained by all this. The rates of *depression* (47.5%) and *disease burden* (42.8) were found to be highest among dialysis patients (47.5%).

We had a *very positive attitude* among the **transplanted patients**. Their former anxiety ideas have become real challenges and challenges, and as a result of their experience in transplantation, they are already taking on their role in healing and are also interested in *accepting the new kidney*. Coexistence with the new organ no longer appears in the imagination as a subjective content, but as a real task, so the denial of self-involvement in the new kidney and the exposure to the new kidney is the least present. They are clearly positive about kidney transplantation, their mistrust diminishes and they believe in their healing. Our study supports the results of previous studies that post-transplant surgery shows a decrease in *depression* (42%) and *disease load* (38.94).

### ***Choice and rejection of transplantation***

In our research, we also discussed the exploration of the psychological factors behind the *refusal of transplantation*. According to our results, *1/3 of the patients* in the transplant are *rejection of the kidney transplant*. Rejection of transplantation is most common among dialysis patients: only *47% of dialysis patients* said they would switch from dialysis to transplantation. Based on this, it can be concluded that the patient's attitudinal attitude is *shifted negatively to kidney transplantation* by deciding on renal dialysis.

*Rejection of transplantation* is also reflected in the low rate of attendance of patients on waiting lists: only 17% of transplant patients are on the transplant waiting list.

Patients with *predialyzed and dialyzed* patients are opposed to the experience of a group of patients undergoing transplant surgery, most of whom (94.3%) *consider renal transplantation successful*. As the patient gets closer to the possibility of choosing kidney transplantation, the refusal of living donor transplantation is becoming more and more conscious. While 40% of the predialyzed would *choose live donor transplantation*, this proportion would be reduced to 28.3% for dialysates.

Living donor transplantation preference is only imaginative in kidney patients until it is realistic to engage in transplantation. This is also evidenced by the fact that only *six of the transplanted patients received a live donor implanted kidney*.

To explore the reasons behind the refusal of transplantation, we also studied the patients' knowledge of renal replacement therapy. Patients have *misunderstood information* in our findings, which is most concerned with the waiting period for the waiting list: many patients (mainly predialyzed patients) believe that it is only after dialysis that waiting for the waiting list is avoided.

In exploring the reasons behind the *rejection / acceptance of transplantation*, we also examined the *attitudes towards transplantation*. Based on our results, the *commitment to transplantation is helped by the belief in the patient's transplantation healing*, the reconciliation of the disadvantages caused by healing and the commitment to self-healing. With the *refusal of transplantation*, there was a lack of distrust of transplant cure and the refusal of transplantation by donor person-to-person factors. *Donor-related feelings* play a key role in rejecting transplantation, and emotions that appear in relation to a donor's personality may inhibit the intention of choosing a transplant.

Based on our results, several *socio-demographic* factors determine the commitment of the patient to transplantation. In older, retired and part-time patients, rejection of kidney transplantation is more common.

In our results, the *disease burden* did not affect the choice of transplantation, but the higher degree of *depression* was associated with the rejection of transplantation.

## DISCUSSION

The main purpose of our research was to explore the *views* and *attitudes* of patients with chronic renal failure. In addition, we tried to find out *what psychological factors are in the background of attitudes in the course of the disease* (how do they get from the end stage to transplantation) and how they influence the development of relationship to treatment, how to determine the choice of transplant. Among the psychic accompanying phenomena we *highlighted depressive symptoms and patient burden*.

In order to explore patients' attitudes and transplantation views, a questionnaire was developed to measure the characteristics of predialyzed, dialyzed and transplanted patient groups. Regardless of the stage of the patients, they are concerned with the idea of surgery and the possibility of transplantation. End stage kidney disease is still uncertain in assessing the healing effects of various interventions, but the idea of transplantation is already apparent. The positive judgment and acceptance of this is greatly influenced by the confidence of the doctor. Both the acceptance of healing procedures and the sense of trust for the doctor are encircled by ambivalences. Ambivalences are prominent on the person of the imagined donor, thus appearing in the interest of the donor's person, in curiosity or in other emotions (eg guilty feelings) that may lead to anxiety or the rejection of the choice of transplant healing.

Based on our results we can describe the *attitudes and the attitudes toward treatment* to individual patient groups.

In the *predialyzed patients*, we had a very negative attitude to transplantation: they are mistrustful of transplant healing and are afraid of the surgical procedure. While they believe in the healing of their illness, they still relinquish their own role and responsibility for their recovery. Predialyzed patients are the least likely to accept a foreign organ to enter their body.

In the case of healing, we also encountered a negative attitudes in *dialysis patients*, in which the feeling of vulnerability and hopelessness dominated most. Dialysis patients are relinquishing their healing, losing their faith in healing, and partially reconciling with dialysis disadvantages. Because of their hopelessness they have doubts about having their own fate and therefore deny their own responsibility and role in their healing. We have experienced a significant psychological decline in dialysis patients, affecting both attitudes related to illness and healing, depressive symptoms and limitations of illness. Based on our results, the number of patients with dialysis was highest in depression and disease burden.

We have met positively attitudes among the *transplanted patients*. The transplant patients basically believe in their healing, accepting the new implanted kidneys and accepting their own role and responsibility in the healing process. Most of them consider the kidney transplant successful, and they expect at least 10 years of operation for their new kidney requirements. Although it has been found that most of the transplant recipients are difficult to undergo the choice of kidney transplantation, after surgery the mistrust for renal implantation has been minimized. In patients who have undergone transplantation, the rate of depression decreases compared to the previous ones.

During our research we discovered the *depressive symptoms* of patients. Most studies confirm that *depression is one of the most common psychological disorders* in end-stage renal disease patients. Our results indicate that approximately half of patients with chronic renal failure are depressed; the highest depression value was found among the dialysates (47.5%). International research has reported post-transplant depression, which is also proven in our sample. In the case of transplant patients, the *rate of depression decreases* to 41%. We were curious about the *socio-demographic* factors of depression in the patients with renal disease. In our study results we found that there is a higher degree of depression among older, unemployed and low-educated patients. Thus, under the younger age, education and employment can be described as a protective factor.

In our research, we also assessed the development of the *disease burden*. We received 39.6 *score* for the disease burden, the highest value being measured in *dialysates* (42.8).

Several studies also report that despite the obvious benefit of transplantation, many patients *reject kidney transplantation*. The main goals of our research were to *reveal the psychological factors behind the refusal of transplantation*. Based on our results, the patients (predialized and dialysed) 1/3 reject the transplant, but only half of the patients in the dialysis group said they would choose transplant instead of dialysis. It is remarkable and surprising that only 17% of transplant patients (predominantly hemodialysis patients) are on the transplant waiting list.

To explore the reasons behind the rejection / acceptance of transplantation, we studied patients' knowledge and attitudes regarding renal replacement therapy. Of these, it is to be noted that many patients (mainly predialized) believe that only after dialysis can be added to the queue. Based on our results behind the choice of transplantation, belief in healing plays an important role: patients who believe in transplantation healing prefer to undergo kidney transplantation.

All this goes hand in hand with the issue of trust in transplantation, which is an indispensable factor in choosing transplantation. Patients' responsibility also promotes commitment to transplantation: patients who are willing to take on the role of recovery, their responsibility and ability to reconcile with the disadvantages caused by the treatment persevere with the choice and commitment of the transplant.

Behind the refusal of transplantation, there are many feelings about the donor person. For the patient, the implanted organ is alien to both immunologically and psychologically. Patients nourish various emotions through the implanted organ to the donor, which may also lead to rejection of the transplant. Based on our findings, depression can also be described as a psychological factor preventing kidney transplantation: patients with a higher degree of depression are less likely to choose transplantation.

## **SUMMARY**

Chronic renal failure is a major public health problem worldwide, which usually ends with transplantation. We have relatively modest research results on the psychological background of the development of the disease.

Our study was done with 285 kidney patients. Three subgroups of renal disease have been isolated: predialyzed, dialyzed and transplanted. The aim of our study was to reveal the development of the disease state of kidney patients. For this purpose, we have created an attitudes questionnaire consisting of 85 articles in a preliminary examination, which can be used to describe the cognitive-emotional attitude of patients to their illness. This was associated with the examination of the degree of depression and disease burden.

They were used to describe the relationship between the three groups of patients to their illness along the indicators suitable for measuring the characteristic psychic conditions. We have been told what psychological factors are behind the choice and rejection of transplantation. Knowing the earlier stages of illness by revealing realistic or unrealistic ideas can better influence the patient's choice of treatment for healing, and better quality of life. Our questionnaire and our results contribute to better adherence to preparation for each intervention - a priority for the acceptance of transplantation.



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### List of publications related to the dissertation

1. **Illés, A.**, Bugán, A., Kovács, S., Ladányi, E., Szegedi, J., József, B., P. Szabó, R., Nemes, B. Á.:  
Patient Attitudes Toward Transplantation as Preferred Treatment Modality in Different Stages  
of Renal Disease.  
*Transplant. Proc.* 49 (7), 1517-1521, 2017.  
DOI: <http://dx.doi.org/10.1016/j.transproceed.2017.06.013>  
IF: 0.806
2. **Illés, A.**, Nemes, B. Á., Zsom, L., Kovács, S., Bugán, A.: Questionnaire Development for the  
Measurement of Patients' Attitudes Toward Renal Transplantation.  
*Transplant. Proc.* 48 (7), 2534-2539, 2016.  
DOI: <http://dx.doi.org/10.1016/j.transproceed.2016.07.007>  
IF: 0.908

### List of other publications

3. **Illés, A.**, Nemes, B. Á., Kovács, S., Bugán, A.: A krónikus vesebetegek transzplantációval  
kapcsolatos attitűdjeinek vizsgálata.  
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The Candidate's publication data submitted to the iDEa Tudóstér have been validated by DEENK on  
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