

PSYCHOLOGICAL PROFILES OF END-STAGE RENAL DISEASE PATIENTS UNDERGOING PRE-TRANSPLANT EVALUATION

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Objective: to identify specific psychological characteristics of individuals with end-stage renal disease (ESRD) who are undergoing evaluation for inclusion on the kidney transplant waiting list, as well as those already on the list. **Materials and methods.** The study was based on the hypothesis that individuals with ESRD exhibit a correlation between family-related anxiety and psychological traits such as weak personal boundaries, depressive symptoms, and difficulty recognizing and expressing emotions. To test this hypothesis, the following validated instruments were employed: Karpov's Reflexivity Diagnostic Method, Beck Depression Inventory (BDI), the Sovereignty of Psychological Space Questionnaire – 2010, Toronto Alexithymia Scale (TAS-20) and Family Anxiety Analysis Questionnaire (FAA). The study sample included 60 people aged 18 to 71 years. The main group consisted of 30 respondents diagnosed with kidney failure, while the control group included 30 ESRD-free individuals. Statistical analysis was conducted using SPSS Statistics version 27.0. **Results.** The study found that patients with ESRD exhibited reduced levels of reflexivity compared to the control group ($p \leq 0.01$). However, no statistically significant differences were observed between the groups in terms of depression levels, personal boundary preservation, or the ability to identify and describe emotions ($p > 0.05$). ESRD patients reported lower levels of family-related anxiety than the healthy individuals ($p \leq 0.05$). Correlation analysis revealed a significant positive relationship between depression and the difficulty in recognizing and identifying emotions among ESRD patients ($R = 0.491$, $p \leq 0.01$), as well as between depression and levels of anxiety ($R = 0.418$, $p \leq 0.05$) and psychological tension ($R = 0.640$, $p \leq 0.01$). An inverse correlation was found between the ability to recognize internal states and make informed decisions, and the perceived sense of security within one's physical and psychological space ($R = -0.385$, $p \leq 0.05$). Additionally, a direct correlation was identified between the level of depression and the duration of hemodialysis treatment in the ESRD population. **Conclusion.** The findings underscore the importance of considering psychological factors in the pre-transplant assessment and preparation of patients with kidney failure. Incorporating psychological evaluation into the transplant protocol may enhance both surgical outcomes and long-term adaptation to post-transplant life.

Keywords: *psychological characteristics, end-stage CKD.*

INTRODUCTION

Approximately 13% of the global population suffers from chronic kidney disease (CKD) [1], with similar prevalence rates observed in both developed and developing countries. Moreover, the number of patients is growing by nearly 10% each year, highlighting its increasing public health burden.

A major challenge in CKD management is that the disease is often asymptomatic in its early stages and therefore tends to be diagnosed only when it has already progressed significantly. In some cases, despite intensive medical interventions, including drug therapy, renal replacement therapy (hemodialysis and peritoneal dialysis), and even kidney transplantation, patients experience clinical deterioration and, in certain instances, graft rejection. Importantly, such unfavorable outcomes cannot always be fully explained by current medical understanding.

In our view, one crucial factor that should also be kept in mind for any human disease is the patient's mental and emotional state. A substantial body of research by both Russian and international scholars highlights the influence of psychological factors on health recovery and postoperative survival in patients with terminal stages of chronic diseases. Notable contributions include the works of Gautier V.S., Klimusheva N.F., Baranskaya N.P., Shmakova T.V., Simonenko M.A., Fedotova P.A., Shevchenko A.O., Khalilulina T.A., Kukova K., and Dzhordzhanova A. [1–6].

Further investigations by Vanchakova N.P., Petrova N.N., Vasilyeva I.A., Babarykina E.V., Dobronravov V.A., Baranetskaia V.N., Guerra F., Di Giacomo D., and others have placed particular emphasis on patients receiving hemodialysis [7–12].

This article presents a study of certain traits and personality characteristics of psychosomatic patients with

end-stage renal disease (ESRD). The psychological profile of these patients has previously been examined, for example, using Cattell's multifactor personality questionnaire [9]. In our research, we applied alternative methods and conducted a comparative analysis of the personality traits of ESRD patients and individuals without CKD (hereafter referred to as "healthy" controls).

Aim of the study: To identify specific psychological characteristics of individuals with ESRD who are either undergoing evaluation for placement on the kidney transplant waiting list or are already on the list.

Relevance of the study: A deeper understanding of the psychological characteristics of patients with ESRD may significantly contribute to their physical, psychological, and social adaptation both before and after kidney transplantation. This, in turn, may help lower the risk of transplant rejection.

MATERIALS AND METHODS

The empirical material for this study was collected in 2024. For the purposes of the research, we focused on a set of psychological characteristics commonly observed in individuals with psychosomatic illnesses, namely:

- Reduced reflectivity – diminished capacity to analyze and evaluate events, limited self-reflection in specific life situations, and a low degree of elaboration in decision-making processes (manifested as a tendency toward impulsivity in decision-making).
- Depressiveness.
- Reduced level of sovereignty of psychological space – diminished preservation of personal boundaries.
- Increased level of alexithymia – difficulty in identifying and describing one's own feelings, limited ability to understand the emotions of others, and externally oriented thinking.
- Elevated general family anxiety – encompassing its key components: guilt, anxiety, and tension.

A working hypothesis was proposed that individuals with ESRD exhibit a correlation between indicators of family anxiety and such psychological traits as weak personal boundaries, depressive tendencies, and difficulty in recognizing and expressing their true emotions.

To test this hypothesis, the following diagnostic methods and questionnaires were employed: A.V. Karpov's Method for assessing the level of reflexivity; Beck Depression Inventory (BDI), adapted by N.V. Tarabrina; the "Sovereignty of Psychological Space – 2010" Questionnaire by S.K. Nartova-Bochaver; Toronto Alexithymia Scale (TAS-20) by G. Taylor, D. Ryan, and R. Bagby, adapted by E.G. Starostina et al.; the "Analysis of Family Anxiety" (ACT) Questionnaire by E. Eidemiller and V. Justickis.

The study sample consisted of 60 participants aged 18 to 71 years (mean age 41.8), of whom 66.7% were women and 33.3% men. The participants were divided into two groups:

Main (experimental) group: 30 individuals with ESRD, including 20 undergoing evaluation for placement on the kidney transplant waiting list and 10 already listed; Control group: 30 individuals without chronic kidney disease. All participants provided informed consent prior to their inclusion in the study.

The study was conducted among patients at Shumakov National Medical Research Center of Transplantation and Artificial Organs, as well as online through Google Forms, which was used to recruit participants for the control group. Statistical analysis was performed using SPSS Statistics, version 27.0.

In the main group, women accounted for 53.3% and men for 46.7%, while in the control group, women comprised 73.3% and men 26.7%. However, the difference in gender distribution between the two groups was not statistically significant ($p > 0.05$). The age of respondents in the main group ranged from 18 to 71 years (mean age: 41.13 years), while in the control group it ranged from 18 to 63 years (mean age: 42.46 years). Similarly, no statistically significant differences were found between the groups in terms of age ($p > 0.05$).

The absence of significant differences in gender and age composition between the groups provides a valid basis for subsequent comparison of their psychological characteristics.

Respondents in the main group were additionally examined based on duration of dialysis and length of time spent on the waiting list for a donor kidney transplant. The median duration of hemodialysis was 1.9 years. For most patients with ESRD, dialysis duration ranged from 1 month to 4 years, with periods exceeding 4 years observed only in isolated cases. Approximately one-third of patients were already on the waiting list, while the remaining participants were still undergoing evaluation for inclusion. The median waiting time on the list was 1.1 years, and only in rare cases did it exceed 2 years.

At the initial stage, the test results were processed according to scoring keys, after which mean values were calculated and distributions were analyzed by the degree of severity of specific psychological characteristics. Subsequently, the data were subjected to statistical processing in accordance with the proposed hypothesis.

RESULTS

Table 1 presents the results of the analysis of respondents in the main and control groups with respect to their level of reflectivity.

According to the data, patients with ESRD in the main group were almost evenly distributed between low and medium levels of reflectivity, with no respondents demonstrating a high level. At the same time, all three levels of reflectivity were observed in the control group, with the majority (63.3%) showing a medium level.

These findings suggest that the main group is generally characterized by a lower level of reflectivity com-

pared to the control group. In practical terms, patients with ESRD display reduced attention to their inner states and greater impulsiveness in decision-making.

Next, we will examine the severity of depression among respondents in both groups.

According to the data presented in Table 2, depression among respondents in both groups was distributed across three levels: absence of symptoms, moderate, and severe. However, in the main group, the proportion of respondents without signs of depression was lower, while the share of those with moderate and severe depression was correspondingly higher compared to the control group. Overall, the severity of depression in patients with ESRD did not show a statistically significant difference from that observed in healthy individuals.

The next stage of analysis focuses on sovereignty of psychological space (SPS) in both patients and healthy respondents.

The data presented in Table 3 indicate that patients with ESRD most frequently demonstrate high levels of physical sovereignty and least frequently exhibit high levels of social sovereignty. This suggests that such patients often lack freedom in choosing friends and social circles, with their social lives being constrained by the influence of significant others, whose actions are aimed at preserving their somatic well-being. These findings are consistent with earlier research [7, 8], which highlighted the pronounced frustration of the need for social achievement in patients undergoing hemodialysis.

Table 1

Levels of reflectivity among respondents

Group	Reflectivity level					
	Low		Medium		High	
	Number of respondents	Percentage	Number	Percentage	Number of respondents	Percentage
Main	15	50.0%	15	50.0%	0	0.0%
Control	7	23.3%	19	63.3%	4	13.4%

Table 2

Severity of depression among respondents

Signs of depression symptoms	Main group		Control group	
	Number of respondents	Percentage	Number of respondents	Percentage
No symptoms of depression	17	56.7%	21	70.0%
Moderate depression	10	33.3%	7	23.3%
Severe depression	3	10.0%	2	6.7%
Total	30	100.0%	30	100.0%

Table 3

Sovereignty of psychological space among respondents

Indicator	No. / %	Main group				Control group			
		Low	Medium	High	Total	Low	Medium	High	Total
Sovereignty of the physical body	N	10	6	14	30	10	7	13	30
	%	33.3%	20.0%	46.7%	100%	33.3%	23.3%	43.3%	100%
Sovereignty of territory	N	12	5	13	30	13	7	10	30
	%	40%	16.70%	43.30%	100%	43.3%	23.3%	33.3%	100%
Sovereignty of the world of things	N	12	5	13	30	10	6	14	30
	%	40.0%	16.7%	43.3%	100%	33.3%	20.0%	46.7%	100%
Sovereignty of habits	N	10	9	11	30	10	10	10	30
	%	33.3%	30%	36.7%	100%	33.3%	33.3%	33.3%	100%
Sovereignty of social connections	N	11	12	7	30	10	5	15	30
	%	36.7%	40.0%	23.3%	100%	33.3%	16.7%	50.0%	100%
Sovereignty of values	N	12	5	13	30	11	6	13	30
	%	40%	16.7%	43.3%	100%	36.7%	20%	43.3%	100%
Sovereignty of the psychological space of the individual	N	10	8	12	30	10	8	12	30
	%	33.3%	26.7%	40%	100%	33.3%	26.7%	40.0%	100%

In contrast, respondents in the control group most commonly display high scores on the scales of sovereignty of social connections and sovereignty of the world of things, while lower scores are observed for sovereignty of territory and sovereignty of habits.

Overall, respondents with ESRD place the greatest value on respect for physical well-being and personal property, freedom of worldview, and physical safety, whereas independence in choosing their social circle is considered the least important factor. By contrast, respondents in the control group place the highest importance on independence in choosing their circle of communication, followed by respect for property, somatic well-being, and freedom of worldview.

The level of sovereignty of social connections in the control group (50.0%) differs significantly from that in the ESRD group (23.3%). A likely explanation for this difference is the “attachment” of ESRD patients to dialysis machines and the necessity of organizing their daily lives around the dialysis schedule. In addition, for these patients, maintaining health becomes the central life priority.

Table 4 presents the results regarding the severity of alexithymia, understood as the inability to recognize and describe one’s own feelings.

Nearly half of the ESRD patients demonstrate moderate levels of alexithymia, while about one-third fall into the low-level category, and the remainder exhibit high levels. In the control group, by contrast, only a single case of high alexithymia was recorded, with all other respondents showing moderate or low levels. This indicates that patients with ESRD generally experience greater difficulty in identifying and expressing their emotions compared to healthy individuals.

Next, we turn to the distribution of respondents in both groups according to family anxiety analysis (FAA) indicators, including general family anxiety and its key components: guilt, anxiety, and tension.

The data presented in Table 5 show that patients with ESRD generally do not exhibit elevated levels of guilt, anxiety, tension, or overall family anxiety. Only 10% of patients reported increased family tension, meaning they do not feel completely at ease when interacting with family members.

Similarly, respondents in the control group showed levels of family guilt, anxiety, and tension that remained within normal limits.

To further explore the relationship between the identified psychological characteristics, we conducted a comparative analysis of the differences between ESRD patients and the control group. Differences in quantitative variables were assessed using the Mann–Whitney U test for two independent samples. Given the non-normal distribution of most scales and the predominance of ordinal-level variables, central tendency and variability were described using the median and interquartile range (lower and upper quartiles).

The results of this comparative analysis of reflectivity, depression, alexithymia, sovereignty of the psychological space, and family anxiety (including its components) are presented in Table 6.

According to the data presented in Table 6, significant differences between respondents in the main and control groups were observed only for reflectivity ($p \leq 0.05$) and for several indicators of the Family Anxiety Analysis (FAA) questionnaire: Guilt ($p \leq 0.01$), Tension, and overall family anxiety ($p \leq 0.05$).

Table 4

Severity of alexithymia among respondents

Severity level	Main group		Control group	
	Number of respondents	Percentage	Number of respondents	Percentage
Low	11	36.7%	13	43.4%
Medium	14	46.7%	16	53.3%
High	5	16.7%	1	3.3%
Total	30	100.0%	30	100.0%

Table 5

Distribution of respondents by family anxiety level indicators

Indicators	Main group				Control group			
	Normal		Elevated level		Normal		Elevated level	
	Number	%	Number	%	Number	%	Number	%
Guilt	30	100%	0	0%	30	100%	0	0%
Anxiety	30	100%	0	0%	29	96.7%	1	3.3%
Tension	27	90%	3	10%	29	96.7%	1	3.3%
General family anxiety	30	100%	0	0%	30	100%	0	0%

The median reflectivity in the control group was significantly higher than in the main group. The average score for guilt towards family members was also significantly lower in patients with ESRD, with more than half of them reporting zero scores, whereas respondents in the control group typically scored between 0 and 2 points (out of 5).

In addition, family tension and general family anxiety were moderately lower among patients with ESRD than in the control group. This suggests that, family-related anxiety appears to be less pronounced in ESRD patients than in healthy individuals.

Analysis of depression indicators (overall scores, as well as results on the cognitive-affective and somatization subscales) revealed no significant differences between patients with ESRD and individuals without this disease ($p > 0.05$). This finding does not align with previously reported data on the higher prevalence of mental disorders among ESRD patients undergoing hemodialysis; this issue will be addressed in more detail in the Discussion section

An analysis was also conducted to compare the main psychological indicators – reflectivity, depression, alexithymia, sovereignty of psychological space, and family anxiety – within the ESRD group, distinguishing between patients already on the kidney transplant waitlist and those undergoing examination for potential inclusion. The results showed moderate differences only in reflectivity ($p \leq 0.05$).

According to the data presented in Table 7, reflectivity in patients undergoing examination for inclusion on the kidney transplant waitlist was moderately lower than in patients already placed on the waiting list. In other words, reflectivity was lowest prior to waiting list placement, and although it increased slightly thereafter, it still remained within the low range. The overall absence of high levels of reflectivity among ESRD patients, along with significantly lower median values compared to the control group, suggests that low reflectivity may be a distinguishing psychological characteristic of ESRD patients.

Table 6

Comparative analysis of psychological characteristics of respondents

Test indicators	Main group, N = 30		Control group, N = 30		Asymptotic significance (Mann–Whitney U test)
	Me	Q25%–Q75%	Me	Q25%–Q75%	
Reflectivity	3.5	1–4	5	3.75–6	<0.001**
Cognitive-affective subscale	3.5	1–7	3.5	1–6.5	0.789
Somatization subscale	5	2.75–7.25	3	1–6	0.078
Depression	9	5–13.25	7.5	2.75–10.25	0.208
Difficulty identifying emotions (DIE)	16	12.75–23	16.5	12–20.5	0.436
Difficulty describing emotions (DDE)	12	8.75–15	11.5	9–16	0.688
Externally oriented thinking (EOT)	18	12.75–23.25	14	12.75–9	0.072
Alexithymia	46	35.5–62.25	44.5	35.75–53.25	0.277
Sovereignty of the physical body (SPB)	4	2–6.5	4	2–8	0.958
Sovereignty of territory (ST)	6	2–8	5	1.5–8	0.471
Sovereignty of the world of things (SWT)	5	2–9.5	5	2.5–7	0.487
Sovereignty of habits (SH)	6	3.5–8	6	1.5–8.5	0.454
Social connection sovereignty (SCS)	3	1–3.5	2	–1...5	0.241
Value sovereignty (VS)	4	0–8	4	–2...8.5	0.8
Sovereignty of psychological space (SPS)	29	15–41.5	27	12.5–37.5	0.487
Guilt	0.13	0–0	0.77	0–2	0.006**
Anxiety	0	0–1	0	0–2	0.265
Tension	1	0–2	2	1–3	0.031*
General family anxiety level (FAA)	0.33	0–1	0.67	0.33–1.75	0.02*

Note: *, Differences are significant at the $p \leq 0.05$ level; **, Differences are significant at the $p \leq 0.01$ level.

Table 7

Analysis of significant intragroup differences in psychological characteristics among Patients with ESRD

	ESRD – undergoing examination for inclusion in the KT waiting list		ESRD – already included in the KT waiting list		Asymptotic significance (Mann–Whitney U test)
	Me	LQ – HQ	Me	LQ – HQ	
Reflexivity	3	1–4	4	3.25–4.25	0.04*

Note: *, Differences are significant at the $p \leq 0.05$ level.

It should also be noted that increased feelings of guilt towards family members, tension, or general family anxiety were not characteristic of patients with ESRD.

Based on the results obtained for the main group, it was also suggested that the severity of depression in ESRD patients may be associated with age and duration of hemodialysis. To verify this assumption, a correlation analysis was performed using Spearman's rank correlation coefficient. The results of this analysis of the main group are presented as a correlation cluster in Fig. 1.

The central correlation identified was between duration of dialysis and depression ($R = 0.391$; $p \leq 0.05$), which was also linked to several other psychological characteristics. Specifically, as the duration of hemodialysis increased, levels of depression rose, accompanied by higher tension, family anxiety, and alexithymia (including its components: difficulty identifying emotions, difficulty describing emotions, and externally oriented thinking).

An additional inverse relationship was found between reflectivity and sovereignty of territory ($R = -0.385$; $p \leq 0.05$). In other words, patients with ESRD who showed lower levels of reflectivity reported a greater sense of safety and control over their physical space.

Overall, the findings suggest that prolonged hemodialysis contributes to depression, which in turn manifests through alexithymia, emotional detachment, and heightened family anxiety and tension. These results align with earlier studies confirming the negative psychological impact of extended dialysis treatment on patients' mental health [7, 10].

Next, we turn to the relationships observed in the control group, presented in Fig. 2.

Fig. 2 shows that in the control group, higher levels of depression are associated with increased family tension and lower levels of sovereignty over territory, possessions, habits, and overall psychological space. In this group, depression shows a more limited pattern of associations, being primarily linked to diminished sovereignty rather than to a broad range of psychological indicators. Notably, depression in the control group is not directly connected to alexithymia or its components, but only indirectly through the sovereignty of the world of things.

Unlike the control group respondents, depression in patients with ESRD is not associated with the sovereignty of territories and the sovereignty of the world of things ($p > 0.05$). Also, in contrast to the control group, additional associations with indicators of family anxiety as

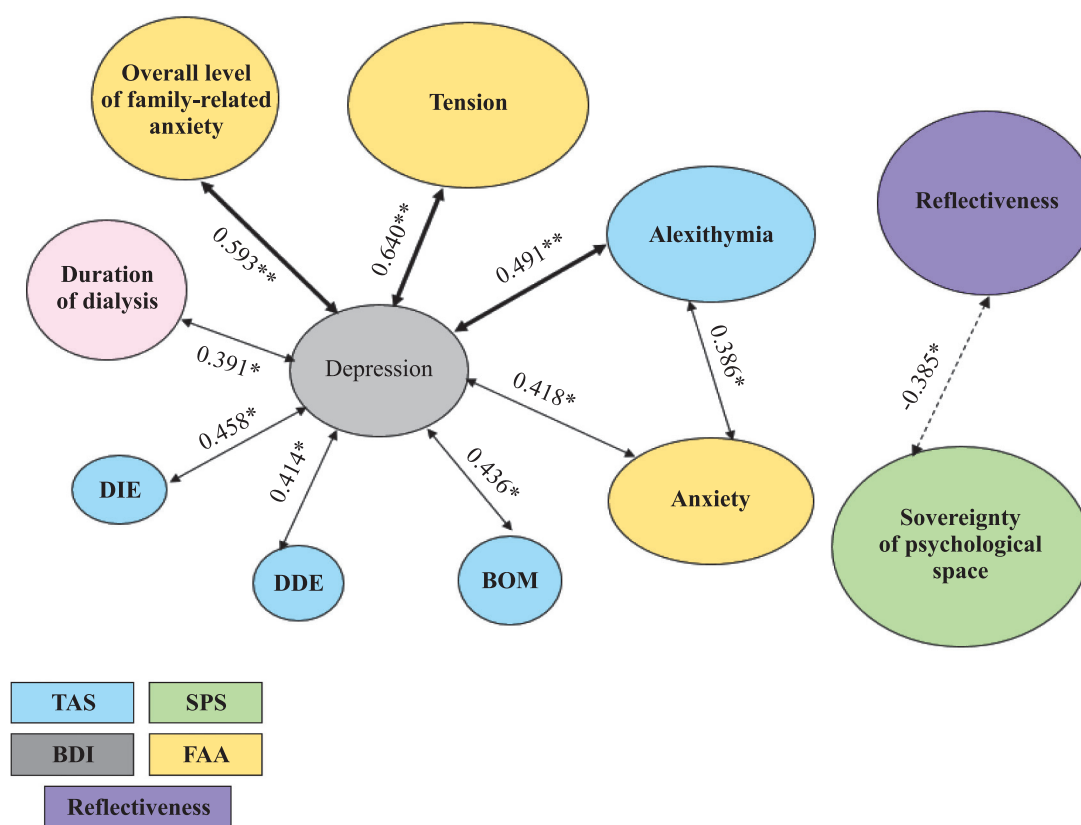


Fig. 1. Significant correlations between depression in patients with CKD, and other psychological characteristics and duration of hemodialysis. Abbreviations: DIE, difficulty in identifying emotions; DDE, difficulty in describing emotions; TAS, Toronto Alexithymia Scale; BDI, Beck Depression Inventory; SPS, sovereignty of psychological space; FAA, general family anxiety level. *, Correlation is significant at $p \leq 0.05$; **, Correlation is significant at $p \leq 0.01$. ——— – Positive strong correlation; ——— – Positive moderate correlation; - - - - - – Negative moderate correlation

In contrast, among patients with ESRD, no associations were found between age and reflectivity, sovereignty, or family anxiety ($p > 0.05$). However, age showed a moderate positive correlation with depression (somatization subscale) and alexithymia (difficulty identifying one's own emotions, difficulty describing the feelings of others, and overall alexithymia). This suggests that older patients with ESRD are more likely to experience difficulties in recognizing and expressing emotions, along with a tendency to repress negative feelings and manifest them as physical (somatic) symptoms. This may indicate the activation of psychological defenses.

Importantly, these age-related associations with psychological characteristics were not observed in the control group.

Taken together, the findings suggest that somatization, i.e., deterioration of health, increases with age. Patients with ESRD also tend to distance themselves from their inner experiences and interpersonal relationships as they grow older.

DISCUSSION

The results obtained for depression differ from those reported by other researchers. In particular, several studies [7–9] describe pronounced depressive and anxiety disorders in patients with ESRD undergoing hemodialysis. Our study demonstrated a link primarily between duration of hemodialysis treatment and increased depression [7–10].

However, our initial assumptions regarding the severity of depression, preservation of personal boundaries, ability to identify and describe emotions, and level of family anxiety (including feelings of guilt, tension, and anxiety) in patients with ESRD were not fully confirmed. We suggest that this may be related to activation of psychological defense mechanisms (such as repression and denial), which allow patients to adapt psychologically to hemodialysis and organize their lifestyle around it. In addition, the severity of anxiety symptoms may be reduced by profound asthenia [7].

The following should be noted with regard to alexithymia indicators. Alexithymia (manifested as difficulty identifying and describing one's own emotions, along with externally oriented thinking) is understood as a deficit in cognitive processing and emotion regulation. It has been linked to a range of somatic and mental disorders, including a tendency toward somatization [13]. Alexithymia is often accompanied by anhedonia (a diminished capacity to experience pleasure) and a general tendency toward undifferentiated negative emotions. Our study established a direct link between alexithymia and anxiety.

According to N.P. Vanchakova, preservation of social activity (and thereby improvement of quality of life) in ESRD patients undergoing hemodialysis is achieved through mechanisms that simultaneously increase their

level of neuroticism [7, 8]. Similarly, N.N. Petrova and I.A. Vasilyeva demonstrated that transformation of life values, heightened importance of the search for meaning in life, a need to adapt to artificially created living conditions during hemodialysis treatment, and the influence of specific psychotraumatic factors associated with hemodialysis contribute to the activation of psychological defenses [9].

In their work, Gautier et al. demonstrated that kidney transplant recipients often experience psychological difficulties integrating the donor organ into their body image. Whether patients are on dialysis or have already received a transplant, they frequently report a sense of compromised integrity. This suggests that they lack sufficient emotional resources to cope with the profound changes imposed by the disease. Addressing this issue requires comprehensive rehabilitation for patients with ESRD – spanning the entire treatment trajectory from placement on the waiting list to postoperative follow-up and eventual reintegration into everyday life. Such rehabilitation must be multidimensional – medical, social, and psychological – and widely accessible [2].

Studies conducted by international researchers have shown that restoring body image integrity and promoting emotional well-being in kidney recipients during the immediate postoperative period contribute to improved health outcomes and significantly reduce the risk of transplant rejection [2].

Studies of the affective sphere of ESRD patients after transplantation have also shown that, as life expectancy with a functioning graft increases, both the somatic and associated psycho-emotional state of patients undergo notable changes. These findings highlight the importance of developing and implementing targeted psychological correction programs aimed at enhancing psychosocial adaptation, thereby improving graft stability and long-term patient survival [11].

CONCLUSION

The present study confirmed that patients with ESRD demonstrate a reduced level of reflectivity, meaning they possess a diminished capacity for self-analysis and tend to make more impulsive decisions.

No significant differences were observed between ESRD patients and healthy individuals in terms of depression, preservation of personal boundaries, or ability to identify and describe emotions. The overall level of family anxiety (including feelings of guilt, tension, and anxiety) was found to be lower in ESRD patients compared to healthy respondents.

Analysis of interrelationships among the studied indicators revealed a direct correlation between depression and inability of ESRD patients to recognize and identify their emotions, as well as elevated anxiety and tension. In other words, increased depression, anxiety, and tension indicates that they are “out of touch” with

their feelings. This diminished emotional awareness may serve as an indicator of underlying depression.

A correlation was identified between patients' ability to recognize their internal state and make informed decisions, and the level of security they perceive within their personal boundaries and physical space.

Furthermore, a direct association was found between severity of depression in ESRD patients and duration of hemodialysis, supporting the findings of earlier studies. In other words, while hemodialysis prolongs patients' lives, it may simultaneously exacerbate deterioration in their as they struggle with emotional awareness. Somatization also increases with age.

A comparison between ESRD patients already on the kidney transplant waitlist and those undergoing preliminary evaluation revealed only moderate differences. Specifically, patients still in the examination stage demonstrated lower levels of reflectivity. This suggests that once placed on the waiting list, patients exhibit a slight increase in self-reflection and a corresponding decrease in impulsive decision-making.

The absence of confirmation of our assumptions regarding levels of depression, preservation of personal boundaries, ability to identify and describe emotions, and levels of family anxiety (including feelings of guilt, tension, and anxiety) in ESRD patients is, in our opinion, associated with the presence and activation of psychological defense mechanisms (such as repression and denial). These defenses appear to facilitate psychological adaptation to the realities of hemodialysis and the need to structure one's lifestyle around it. This interpretation aligns with the conclusions of previous studies on patients undergoing hemodialysis, although it requires further research.

The authors declare no conflict of interest.

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