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Psychological burden and existential well-being in advanced kidney disease: a comparative analysis of end-stage renal disease (ESRD) patients, transplant recipients and healthy controls

Ψυχική και υπαρξιακή εξουθένωση και αποπροσωποποίηση στην προχωρημένη νεφρική νόσο. Μια συγκριτική μελέτη σε ασθενείς με χρόνια νεφρική νόσο τελικού σταδίου, λήπτες μοσχευμάτων νεφρού και υγιείς μάρτυρες

Περίληψη στο τέλος του άρθρου

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Introduction: Chronic kidney disease (CKD), and particularly end-stage renal disease (ESRD), is associated with substantial psychological burden, including elevated rates of depression, anxiety and somatic distress, while kidney transplantation improves physical outcomes but does not eliminate psychological vulnerability. Previous research has shown that personality traits, coping styles, hope and meaning in life significantly influence the emotional adjustment of patients undergoing renal replacement therapies.

Aim: The aim of this study was to compare psychopathology, personality traits, burnout, depersonalization, hope and meaning in life among three groups: ESRD patients on hemodialysis, kidney transplant recipients and healthy controls.

Materials and Methods: The sample consisted of 100 patients (50 ESRD patients on hemodialysis and 50 kidney transplant recipients) and 50 healthy controls matched for key sociodemographic characteristics. Data collection included sociodemographic questionnaires and validated psychometric tools: SCL-90-R, Cambridge Depersonalization Scale (CDS), Maslach Burnout Inventory (MBI), Eysenck Personality Questionnaire (EPQ), Meaning in Life Questionnaire (MLQ), and Adult Hope Scale (AHS). Participation was voluntary, anonymity was ensured, informed consent was obtained, and institutional ethical approval was granted. Statistical analysis included descriptive measures, group comparisons and p-values

with 95% confidence intervals.
Results: **Patients scored higher than healthy controls on most SCL-90-R subscales, with psychoticism showing a statistically significant difference (p=0.019). ESRD patients recorded higher levels of psychopathology, emotional exhaustion, personal accomplishment deficits and depersonalization compared with transplant recipients, though only the MLQ "search for meaning" subscale differed significantly (p=0.007). Transplant patients showed higher hope levels on both AHS subscales but without statistical significance. Gender analyses revealed that women in both clinical groups exhibited significantly higher somatization, anxiety and obsessive-compulsive symptoms, while men scored higher in hope and meaning domains.**
Conclusions: **ESRD and transplant patients demonstrate substantial psychological burden relative to healthy controls, with notable gender-specific patterns. ESRD patients appear more engaged in existential search, whereas transplant recipients show stronger hopeful thinking. These findings highlight the importance of integrating structured psychological screening and personalized psychosocial interventions into routine nephrology care to improve emotional resilience and overall quality of life.**

Key words: *Chronic kidney disease; Renal transplantation; Mental health; Psychological assessment; Quality of life; Chronic illness*

Introduction

Chronic kidney disease, particularly at the stage of end-stage renal disease (ESRD), is widely recognized as a condition that imposes substantial physical, emotional and social burdens on affected individuals. Hemodialysis, the most common life-sustaining therapy for ESRD, requires strict treatment schedules, ongoing dietary restrictions and persistent symptom management, all of which can adversely affect psychological well-being. Studies consistently demonstrate elevated rates of depression, anxiety and somatic distress among hemodialysis patients, often exceeding those found in other chronic illness populations.[1,2] At the same time, personality traits, coping strategies and existential constructs such as hope and meaning in life are increasingly recognized as important determinants of psychological resilience and overall quality of life in this group.[3] These psychosocial dimensions interact with clinical outcomes, influencing treatment adherence, perceived burden and even mortality risk,[4] highlighting the need for structured assessment across emotional and personality domains in nephrology care.

Renal transplantation generally leads to improved physical functioning and quality of life compared with dialysis; however, transplant recipients continue to face significant psychological challenges, including fear of graft rejection, medication toxicity, lifestyle adjustments and uncertainty about long-term prognosis. Evidence shows that although psychological symptoms may decrease post-transplantation, many patients continue to report distress, and in some domains, such as anxiety and obsessive–compulsive symptoms, rates may remain comparable to or only slightly lower than those seen in dialysis cohorts.[5,6] Gender-related differences have been repeatedly observed, with women, both on dialysis and post-transplant, demonstrating higher levels of psychopathology, whereas men often report stronger indicators of hope, self-efficacy and meaning.[7,8] Understanding these patterns is essential for designing targeted psychosocial interventions that address the unique emotional and existential needs of patients across the spectrum of chronic kidney disease.

Methodology

This study employed an observational epidemiological research design aimed at examining psychometric, personality and existential characteristics among individuals with end-stage renal disease (ESRD), kidney

transplant recipients and healthy controls. The total research sample consisted of 150 participants. From these, 100 were patients recruited from the same nephrology service in order to minimize selection bias and ensure diagnostic and procedural homogeneity. The patient cohort included 50 individuals diagnosed with ESRD stage 5, according to K/DOQI classification, and receiving maintenance hemodialysis, as well as 50 individuals who had undergone kidney transplantation and were under routine post-transplant follow-up. Additionally, a comparison group of 50 healthy volunteers with no history of chronic kidney disease or major psychiatric disorders was recruited to serve as controls. Exclusion criteria included inability to communicate in Greek and presence of severe cognitive impairment that could affect questionnaire completion. All participants provided informed consent prior to participation.

Data collection involved the administration of validated psychometric instruments. Sociodemographic variables were recorded through a structured questionnaire documenting age, sex, marital status, education, employment, socioeconomic status and living arrangements. Depersonalization experiences were assessed using the Cambridge Depersonalization Scale (CDS), a validated 29-item instrument with strong reliability in Greek populations. Burnout symptoms were measured using a modified version of the Maslach Burnout Inventory (MBI), adapted for clinical rather than occupational contexts. Personality traits were evaluated using the Greek-adapted Eysenck Personality Questionnaire (EPQ), which assesses neuroticism, extraversion, psychoticism and social desirability (lie scale). Psychopathology symptoms were captured using the SCL-90-R, a comprehensive measure of nine clinical symptom dimensions. Meaning in life was assessed via the Meaning in Life Questionnaire (MLQ), while hope levels were evaluated with the Adult Hope Scale (AHS), which includes the Agency and Pathways subscales. All instruments are internationally validated and widely used in chronic illness research. Data were analyzed to explore differences across the three groups and to investigate associations between depersonalization, psychopathology, personality traits and existential constructs.

The study was conducted in accordance with the ethical principles of the Declaration of Helsinki and the guidelines of the International Committee of Medical Journal Editors (ICMJE) for research involving human participants. Approval for the study was obtained from the hospital's Ethics and Research Committee, and formal written authorization was granted by the hospital administration for data collection and study implementation. All participants were fully informed about the aims, procedures, potential risks, and benefits of the study and provided written informed consent prior to participation, with explicit assurances that their involvement was voluntary and that they could withdraw at any time without consequences. Anonymity and confidentiality were strictly maintained, with all data recorded and analyzed in coded, non-identifiable form. The study involved only questionnaire-based assessment and included no medical or experimental interventions. Additionally, permission for the use of all psychometric instruments (CDS, MBI, EPQ, SCL-90-R, MLQ, AHS) was obtained from the authors or legitimate copyright holders.

Results

The research sample consisted of 100 patients and 50 healthy controls. The patients consist of 50 end-stage kidney patients and 50 transplant kidney patients. The age of end-stage renal patients was an average of 62.8 years with a standard deviation of 16.6 and a median of 64, of transplant patients 57.6 years, with a standard deviation of 13.2 and a median of 60, and the mean age of healthy controls was 50.6 years, with a standard deviation of 8.5 and a median of 51. The ratio of men and women is the same in the two groups of patients, 54.0% of patients are men and 46.0% women, while the corresponding percentage for healthy is 28.0% men and 72.0% women (Table 1). Regarding the educational level of the participants, 56.0% of end-stage kidney patients had completed primary or secondary education and the remaining 44.0% had completed tertiary education. Similarly, among transplant patients, 52.0% have completed primary or secondary education and 48.0% tertiary education. The percentage of healthy witnesses who have completed primary or secondary education is 18.0% and tertiary education is 82.0%.

The percentage of end-stage renal patients who stated that they are working is 26.0%, the corresponding percentage of transplant patients is 36.0% and healthy controls is 98.0%. The percentage of kidney patients who are married is 60.0%, while the remaining percentage is single, widowed or divorced. Married transplant patients are 64.0% and the corresponding percentage of healthy patients was 54.0%. The average number of family members of kidney patients was 2.4, transplant patients 2.1 and healthy patients 2.5. According to the participants' responses, 6.0% of end-stage kidney pa-

Table 1: Distribution of the sick and healthy participants in terms of demographic characteristics

Characteristics		End-stage kidney patients		Transplant patients		Healthy	
		n	%	n	%	n	%
Sex	Man	27	54,0	27	54,0	14	28,0
	Wife	23	46,0	23	46,0	36	72,0
Education	Primary/ Secondary	28	56,0	26	52,0	9	18,0
	Higher	22	44,0	24	48,0	41	82,0
Work	No	37	74,0	32	64,0	1	2,0
	Yes	13	26,0	18	36,0	49	98,0
Marital status	Married	30	60,0	32	64,0	27	54,0
	Married/ Widowed/ Divorced	20	40,0	18	36,0	23	46,0
Socio-economic situation	Superior	3	6,0	4	8,0	2	4,0
	Upper waist	3	6,0	4	8,0	8	16,0
	Waist	25	50,0	33	66,0	37	74,0
	Waist Lower	13	26,0	6	12,0	3	6,0
	Lower	6	12,0	3	6,0	0	0
		Mean Value (t.a.)	Median	Mean Value(sq.a.)	Median	Mean Value(sq.a.)	Median
Age		56,3 (15,4)	56	52,1 (12,1)	53	44,6 (8,5)	45
Number of family members on the same roof		2,4 (1,3)	2	2,1 (1,3)	2	2,5 (0,9)	2

T.A.: Standard deviation

Table 2: Duration of illness of patients

		End-stage nephropathy patients		Transplant patients	
Duration		Mean Value(sq.a.)	Median	Mean Value(sq.a.)	Median
		12,28 (10,21)	9,5	15,72 (9,85)	15,5

T.A.: Standard deviation

tients rated their socio-economic status as higher, 6.0% as average higher, 50.0% as average, 26.0% as mean inferior and 12.0% as lower. Accordingly, 8.0% of transplant patients stated that their socio-economic status is superior, 8.0% mean higher, 66.0% average, 12.0% average lower and 6.0% lower. The corresponding percentages for the healthy were 4.0%, 16.0%, 74.0% and 6.0%.

Transplant patients seem to be ill for more years than end-stage kidney patients, since they have been ill for an average of 15.72 years (standard deviation of 9.85) and half have been ill for less than 15.5 years. End-stage kidney patients have an average of 12.28 years (standard deviation of 10.21) and half of them have been ill for less than 9.5 years (Table 2).

Comparison of patients and controls in terms of their psychometric scales

Comparing the psychometric scales of end-stage renal patients and transplant patients (Table 4), end-stage renal patients score statistically significantly higher on the scale of the search for meaning in life than transplant recipients (26.4±5.4 versus 23.5±6.4, p=0.007). In addition, kidney patients have on average higher scores on the psychopathology scales, emotional exhaustion and personal achievement, and overall depersonalization score than transplant patients, however, these differences were not found to be statistically significant. Therefore, there is evidence that end-stage kidney patients show more symptoms of psychopathology, emotional ex-

Table 4: Psychometric scales of kidney patients and transplant patients.

Psychometric scales			Average price	Standard deviation	Median	p
SCL90	Somatization	End-stage nephropathy patients	22,9	8,3	21	0,297
		Transplant patients	21,8	9,0	19	
	Compulsiveness	End-stage nephropathy patients	20,3	8,0	18	0,429
		Transplant patients	18,9	7,0	17	
	Interpersonal sensitivity	End-stage nephropathy patients	16,8	6,0	15	0,847
		Transplant patients	16,9	7,5	15	
	Depression	End-stage nephropathy patients	26,4	11,1	22	0,152
		Transplant patients	23,6	9,7	20,5	
	Stress	End-stage nephropathy patients	16,6	7,7	14	0,906
		Transplant patients	16,4	6,8	14,5	
	Anger	End-stage nephropathy patients	9,5	4,2	8	0,939
		Transplant patients	9,4	4,2	8	
	Phobic anxiety	End-stage nephropathy patients	10,1	3,6	9	0,454
		Transplant patients	9,6	4,1	8	
	Paranoid ideation	End-stage nephropathy patients	12,0	4,7	11	0,819
		Transplant patients	11,8	4,6	10	
	Psychoticism	End-stage nephropathy patients	15,0	5,1	13	0,997
		Transplant patients	14,6	4,7	14	
EPQ	Extroversion	End-stage nephropathy patients	11,5	2,2	12	0,805
		Transplant patients	11,3	2,2	12	
	Psychoticism	End-stage nephropathy patients	13,2	2,3	13	0,141
		Transplant patients	13,6	2,1	14	
	Neuroticism	End-stage nephropathy patients	8,7	2,3	8	0,488
		Transplant patients	9,2	3,0	8,5	
	Falsehood	End-stage nephropathy patients	7,3	3,0	7	0,795
		Transplant patients	7,4	2,9	7	
MBI	Emotional exhaustion	End-stage nephropathy patients	18,5	15,0	14	0,229
		Transplant patients	14,9	13,0	12,5	
	Lack of personal achievement	End-stage nephropathy patients	34,0	10,2	35	0,161
		Transplant patients	30,3	12,5	30	
	Depersonalization	End-stage nephropathy patients	5,5	5,5	5	0,660
		Transplant patients	6,3	6,6	5	
AHP	Action	End-stage nephropathy patients	23,4	6,7	26	0,270
		Transplant patients	25,6	3,6	25,5	
	Routes	End-stage nephropathy patients	24,8	5,2	26	0,081
		Transplant patients	26,6	3,5	27	
	Total score	End-stage nephropathy patients	48,2	10,9	51	0,129
		Transplant patients	52,2	6,2	52,5	
MLQ	Existence	End-stage nephropathy patients	27,7	5,6	29	0,919
		Transplant patients	27,8	5,0	28	
	Quest	End-stage nephropathy patients	26,4	5,4	27	0,007
		Transplant patients	23,5	6,4	23	
CDS	Total score	End-stage nephropathy patients	33,2	46,2	16	0,436
		Transplant patients	22,4	21,3	15,5	

Table 5: Psychometric scales of patients and controls

Psychometric scales			Average price	Standard deviation	Median	p
SCL90	Somatization	Patients	22,4	8,6	21	0,426
		Witnesses	21,4	8,4	19,5	
	Compulsiveness	Patients	19,6	7,5	17	0,678
		Witnesses	18,6	6,0	17	
	Interpersonal sensitivity	Patients	16,8	6,8	15	0,064
		Witnesses	14,8	4,8	13,5	
	Depression	Patients	25,0	10,5	22	0,168
		Witnesses	22,2	7,8	21	
	Stress	Patients	16,5	7,3	14	0,210
		Witnesses	14,4	4,8	13	
	Anger	Patients	9,4	4,2	8	0,457
		Witnesses	9,4	3,1	8,5	
	Phobic anxiety	Patients	9,8	3,8	8	0,478
		Witnesses	9,0	2,4	8	
	Paranoid ideation	Patients	11,9	4,7	10	0,439
		Witnesses	11,2	4,2	10	
	Psychoticism	Patients	14,8	4,9	14	0,019
		Witnesses	13,5	3,9	12	
EPQ	Extroversion	Patients	11,4	2,2	12	0,219
		Witnesses	11,0	2,1	11	
	Psychoticism	Patients	13,4	2,2	13	0,316
		Witnesses	13,8	2,1	13,5	
	Neuroticism	Patients	8,9	2,7	8	0,557
		Witnesses	9,0	2,5	9	
	Falsehood	Patients	7,3	2,9	7	0,003
		Witnesses	5,9	2,3	5,5	
MBI	Emotional exhaustion	Patients	16,7	14,1	13	0,747
		Witnesses	14,9	11,3	11	
	Lack of personal achievement	Patients	32,2	11,5	33	0,683
		Witnesses	33,6	8,6	35	
	Depersonalization	Patients	5,9	6,1	5	0,247
		Witnesses	6,2	4,7	4,5	
AHP	Action	Patients	24,5	5,4	26	0,078
		Witnesses	26,3	3,7	27	
	Routes	Patients	25,7	4,5	27	0,807
		Witnesses	25,8	3,9	27	
	Total score	Patients	50,2	9,1	52	0,301
		Witnesses	52,1	6,7	54	
MLQ	Existence	Patients	27,7	5,3	28	0,660
		Witnesses	27,7	4,0	28	
	Quest	Patients	24,9	6,1	25	0,870
		Witnesses	25,1	5,2	25	
CDS	Total score	Patients	27,8	36,2	16	0,712
		Witnesses	22,2	20,0	16	

Table 6: Psychometric scales of end-stage renal patients and transplant recipients in terms of their sex

Psychometric scales		End-stage kidney patients				Transplant patients			
	Sex	Average price	T.a.	Median	p	Average price	T.a.	Median	p
SCL90									
Somatization	Man	20,2	6,6	19	0,011	19,3	8,6	16	0,011
	Wife	26,2	9,0	25		24,8	8,7	24	
Compulsiveness	Man	17,9	5,9	17,5	0,107	17,0	6,4	16	0,021
	Wife	23,0	9,3	18		21,2	7,1	21	
Interpersonal sensitivity	Man	14,7	4,2	13	0,011	15,6	5,8	14	0,204
	Wife	19,2	6,9	20		18,4	9,1	17	
Depression	Man	23,5	9,3	21,5	0,063	21,4	8,4	18	0,051
	Wife	29,9	12,3	25		26,3	10,6	24	
Stress	Man	13,4	4,4	12	0,002	14,3	5,8	12	0,018
	Wife	20,4	9,1	18		18,8	7,3	18	
Anger	Man	8,9	4,1	7,5	0,204	9,1	3,9	8	0,921
	Wife	10,2	4,3	8		9,7	4,6	8	
Phobic anxiety	Man	9,4	2,6	8,5	0,411	9,2	4,3	8	0,251
	Wife	10,9	4,5	10		10,0	3,8	8	
Paranoid ideation	Man	10,6	4,2	9,5	0,015	11,1	4,1	9	0,264
	Wife	13,7	4,9	13		12,6	5,2	12	
Psychoticism	Man	14,4	5,2	13	0,144	14,6	5,7	14	0,569
	Wife	15,8	5,1	15		14,6	3,4	14	
EPQ									
Extroversion	Man	11,4	2,2	12	0,680	10,9	2,2	11	0,132
	Wife	11,6	2,2	12		11,8	2,2	12	
Psychoticism	Man	12,6	1,6	13	0,061	13,3	1,9	13	0,268
	Wife	14,0	2,8	13		14,0	2,2	14	
Neuroticism	Man	8,5	2,5	8	0,549	10,3	3,3	10	0,003
	Wife	8,9	2,2	9		7,8	2,0	8	
Falsehood	Man	7,6	3,1	8	0,420	7,0	3,2	6	0,167
	Wife	6,9	2,8	6		7,8	2,4	8	
MBI									
Emotional exhaustion	Man	15,7	12,7	13,5	0,267	13,8	12,7	12	0,391
	Wife	21,8	16,9	18		16,1	13,4	14	
Lack of personal achievement	Man	31,7	10,3	31	0,071	31,6	12,4	32	0,413
	Wife	36,7	9,7	39		28,9	12,7	29	
Depersonalization	Man	5,6	6,5	3,5	0,563	6,9	7,8	5	0,914
	Wife	5,3	4,2	6		5,7	5,0	5	
AHS									
Action	Man	23,9	6,4	27	0,553	26,3	3,2	26	0,151
	Wife	22,8	7,1	24		24,8	3,9	25	
Routes	Man	25,8	5,7	27	0,039	27,8	2,5	28	0,020
	Wife	23,7	4,6	24		25,3	4,0	26	

Total score	Man	49,6	10,9	53	0,182	54,1	5,0	54	0,031
	Wife	46,6	11,0	49		50,1	6,9	49	
MLQ									
Existence	Man	29,1	4,5	30,5	0,097	29,6	3,5	30	0,009
	Wife	26,1	6,3	26		25,7	5,8	25	
Quest	Man	26,7	6,5	28	0,300	23,7	5,9	23	0,922
	Wife	26,0	4,0	26		23,2	7,0	23	
CDS									
Total score	Man	22,4	26,8	13,5	0,100	21,9	18,6	15	0,876
	Wife	45,9	60,1	17		22,9	24,5	16	

T.A.: Standard deviation

haustion, and depersonalization, but fewer symptoms of existential burnout. Transplant patients score on average higher on the scale of hope, both in actions and in planning to achieve its goals, however, the differences were not found to be statistically significant.

In Table 5, the psychometric scales of patients (end-stage renal patients and transplant patients) are presented in relation to the group of healthy controls. Patients score on average higher on all psychopathology scales than healthy people, however, only on the psychoticism scale was the difference found to be statistically significant (14.8±4.9 versus 13.5±3.9, p=0.019). In terms of personality scales, patients have on average higher scores on the lie scale than controls (7.3±2.9 versus 5.9±2.3, p=0.003), so patients tend to use falsehood more often to present themselves in more favorable situations than healthy participants.

Comparison of psychometric scales in terms of demographic and clinical characteristics of patients and controls.

Table 6 shows the levels of the psychometric scales of end-stage renal patients and transplant patients kidney patients in terms of their gender. End-stage female kidney patients have on average higher scores on all psychopathology scales (SCL90) than their male counterparts, however statistically significant differences were found in the scale of somatization (26.2±9.0 versus 20.2±6.6, p=0.011), interpersonal sensitivity (19.2±6.9 versus 14.7±4.2, p=0.011, anxiety (20.4±9.1 versus 13.4±4.4, p=0.002) and paranoid ideation (13.7±4.9 versus 10.6±4.2, p=0.015). In addition, the scale of planning to achieve goals seems to vary according to the gender of kidney patients, specifically men seem to have a greater ability to plan multiple ways to achieve their goals than women end-stage kidney patients (25.8±5.7 versus 23.7±4.6, p=0.039).

Comparing men and women who have undergone transplantation, women show more symptoms of psychopathology than men, however statistically significant differences were found in the scale of somatization (24.8±8.7 versus 19.3±8.6, p=0.011), obsessive-compulsive (21.2±7.1 versus 17.0±6.4, p=0.021) and anxiety (18.8±7.3 versus 14.3±5.8.p=0.018. Regarding the neurothumb scale, From the personality scales, in the personality questionnaire, transplant men patients show statistically significantly higher levels of neuroticism than transplant women patients (10.3±3.3 versus 7.8±2.0, p=0.003), while hemodialysis male patients show lower levels of neuroticism than their female counterparts, but this difference is not statistically significant.

Similarly to the end-stage kidney patient group, transplant men show greater ability to plan to achieve their goals than women (27.8±2.5 versus 25.3±4.0, p=0.020). In addition, transplant men patients have statistically significantly higher values in the overall hope score than women (54.1±5.0 versus 50.1±6.9, p=0.031). Regarding the scale that assesses the meaning of life of transplant patients, there is a statistically significant difference in the average scores of men and women, where men seem to have more meaning in their lives than transplant women patients (29.6±3.5 versus 25.7±5.8, p=0.009).

Discussion

The sociodemographic findings indicate that patients with end-stage renal disease (ESRD) undergoing dialysis and renal transplant recipients present very similar gender distributions, educational levels and family structures. However, notable differences appear in employment status, since only 26% of dialysis patients

were employed compared with 36% of transplant recipients, while almost all healthy controls were working. This pattern is consistent with international evidence suggesting that dialysis imposes substantial functional, social and time constraints that limit employability.[9] Transplant recipients often regain a degree of physical autonomy, which can explain their somewhat higher engagement in the workforce.

In relation to psychological functioning, the two clinical groups present modest differences that do not reach statistical significance in the majority of scales. Dialysis patients recorded slightly higher mean values in somatization and depression compared with transplant recipients, while anxiety, hostility, phobic anxiety and psychoticism were almost identical between the groups. These findings are in line with previous studies reporting that depressive symptoms are more pronounced in individuals undergoing dialysis due to treatment burden, dietary restrictions and uncertainty about their health trajectory.[10] Transplant recipients generally report psychological improvement after surgery, although they continue to face stressors associated with immunosuppression, fear of graft rejection and the need for constant medical monitoring.[11] This could explain the relatively small differences observed in our sample.

The comparison of personality traits measured with the EPQ also revealed no significant disparities between the two groups. Slight fluctuations in psychoticism, neuroticism and extraversion were observed, but they remained minimal. Similar results have been described in international literature, where personality characteristics tend to remain stable over time and are less influenced by medical treatment modality.[9] The MBI burnout subscales followed a similar pattern. Dialysis patients exhibited higher emotional exhaustion and lower personal accomplishment, which agrees with research showing that dialysis involves strong physical and emotional demands. However, differences did not reach significance, potentially due to adaptation mechanisms or coping strategies acquired over years of treatment.

The Adult Hope Scale provided more distinctive differences, although still not statistically significant. Transplant recipients reported higher agency and pathways scores, which reflects a greater sense of direction, motivation and control over their goals. This tendency is supported by international research where transplantation is associated with improved self-efficacy and strengthened psychological resilience.[10] A statistically significant difference was found only in the "search for meaning" subscale of the MLQ, with dialysis patients scoring higher than transplant recipients. This finding suggests that individuals undergoing dialysis may be more actively engaged in existential exploration as they navigate the challenges of chronic treatment. Similar observations have been noted in chronic illness literature, where meaning-seeking is often intensified during long-term disease processes.[11]

Taken together, these results reflect a complex psychosocial landscape. Dialysis patients appear to carry a heavier emotional burden, although transplant recipients continue to experience psychological vulnerability despite improved physical outcomes. The absence of large and statistically significant differences in many domains may be due to the persistence of chronic illness-related stress even after transplantation or to the heterogeneity of coping strategies across patients.

In this study we compared end stage renal disease patients on dialysis with healthy participants matched on key sociodemographic variables, focusing on personality traits, burnout, hope, meaning in life and cognitive distortions. Overall, the profiles of the two groups were remarkably similar. On the EPQ there were no statistically significant differences in extraversion, psychoticism or neuroticism, suggesting that chronic kidney disease and dialysis in our sample were not associated with major shifts in these broad personality dimensions. This contrasts partly with earlier work using Eysenck measures, where haemodialysis patients tended to show higher neuroticism and lower extraversion than controls, interpreted as a reaction to chronic illness and treatment burden.[12,13] Our only significant difference on the EPQ was a higher score on the Lie scale in patients compared with healthy participants, which may reflect greater social desirability, defensive responding or a tendency to minimise difficulties in the context of a stigmatising and demanding illness. Similar elevations in dissimulation have been reported in other haemodialysis cohorts and have been interpreted as a coping mechanism in the face of long-term treatment stress.[12]

Burnout indicators, as assessed with the Maslach Burnout Inventory, also did not differ significantly between patients and healthy individuals. Emotional exhaustion, depersonalisation and lack of personal accomplishment were all in comparable ranges in both groups. This is

noteworthy, given that haemodialysis is typically associated with high levels of physical and psychological strain and with impaired quality of life compared with healthy controls.[14] The absence of higher burnout in our patient group may reflect effective adaptation, social and family support, or good organisation of dialysis care in the centres from which our participants were recruited. It is also possible that the higher Lie scores indicate some under reporting of distress, which could partially mask subtle differences in burnout symptoms.

Regarding positive psychological resources, levels of hope (Adult Hope Scale) and meaning in life (MLQ presence and search) were broadly comparable between patients and healthy participants, with only a non-significant trend for lower agency (action) in the patient group. This finding is somewhat more optimistic than several previous studies where haemodialysis patients showed low or moderate hope and clear associations between reduced hope and worse psychological outcomes.[15] Likewise, our data suggest that the experience of meaning in life in patients was preserved and similar to that of healthy individuals, in line with recent work showing relatively high meaning scores in haemodialysis populations, although influenced by factors such as religious belief, dialysis duration and symptom burden.[16] Maintaining hope and meaning may act as important protective factors that buffer the emotional impact of chronic renal failure and intensive treatment, and this could partly explain the absence of large group differences in personality and burnout indicators.

Finally, cognitive distortions as measured by the CDS did not differ significantly between groups, although the mean score was numerically higher in patients, with large variability. Given the established links between cognitive distortions, depression and anxiety in chronic illness, the lack of a clear difference suggests that, in this sample, maladaptive thinking patterns were not systematically more pronounced in dialysis patients than in healthy controls, or that such differences are subtle and require larger samples to detect. In combination with the findings on personality, burnout, hope and meaning, our results portray a group of patients living with end stage renal disease who, despite the objective burden of their condition, demonstrate considerable psychological resilience and adaptation.

Taken together, these findings contribute to a more nuanced picture of the psychological profile of haemodialysis patients compared with healthy individuals. While prior literature has often emphasised elevated neuroticism, distress and reduced quality of life in this population[12-16] our data highlight the potential for preserved personality structure, maintained meaning in life and relatively stable levels of hope. At the same time, the higher Lie scores point to the need for clinicians to be attentive to possible defensive minimisation of problems in routine assessment. Future studies with larger samples and longitudinal designs could clarify how these psychological dimensions evolve over time and how they interact with clinical outcomes and adherence in patients with end stage renal disease.

The gender stratified analysis of psychometric scales in end stage renal disease (ESRD) and kidney transplant recipients shows a consistent pattern of higher psychological symptom burden among women, alongside more goal directed thinking, hope and perceived meaning in life among men. Among patients with ESRD, women scored higher than men on all SCL 90 subscales, with statistically significant differences for somatization, interpersonal sensitivity, anxiety and paranoid ideation. This suggests that female patients not only experience more intense physical symptom perception but also greater interpersonal vulnerability and anxious suspiciousness. Similar patterns have been reported in other ESRD cohorts, where women on hemodialysis present higher levels of depression, anxiety and global psychological distress compared with men, often measured with SCL 90 and related instruments.[7,17]

These findings have been linked to gendered differences in coping, social roles and body awareness, and support the interpretation that female ESRD patients constitute a particularly vulnerable subgroup from a mental health perspective.

In contrast, male ESRD patients in the present study showed significantly higher scores on the "pathways" component of hope, reflecting a greater perceived ability to generate multiple routes to their goals. This is clinically important, because hope and future oriented planning are associated with better adjustment and quality of life in hemodialysis populations. Cross sectional data from Jordan, for example, have demonstrated that higher hope scores are positively correlated with all domains of quality of life in hemodialysis patients.[3] Integrative reviews have also highlighted spirituality and related constructs such as hope as key resources that mitigate psychological distress and improve perceived quality of life in chronic kidney disease.[18]

Taken together, the co-occurrence of higher symptom burden and relatively lower hopeful planning among

women suggests that interventions that explicitly foster hope, agency and coping resources may need to be tailored with a gender sensitive lens.

Among transplant recipients, women again exhibited higher levels of psychopathology than men, with significant differences in somatization, obsessive compulsive symptoms and anxiety, which is consistent with reports that female kidney transplant patients tend to report more emotional symptoms and lower health related quality of life than males.[6,8]

Interestingly, however, the personality profile differed between modalities. Transplant men patients showed significantly higher neuroticism scores than transplant women patients, whereas in the ESRD group women had higher, though non-significant, neuroticism levels. This may reflect the specific psychological demands of life after transplantation for men, such as concerns about graft survival, work and family roles, or perceived responsibility for the donated organ, which have been described qualitatively in the transplant literature. At the same time, male transplant recipients displayed higher scores on hope (both pathways and total score) and on the "presence of meaning in life" dimension, suggesting that their greater emotional lability coexists with a stronger sense that life is meaningful and that there are concrete ways to pursue valued goals.

The pattern observed in both ESRD and transplant groups, where women experience a heavier burden of psychiatric symptoms while men report higher levels of hope and meaning, aligns with broader evidence that spiritual resources, religiosity and hope are associated with better mental health and even improved clinical outcomes in chronic kidney disease and post-transplant settings.[3,18]

Our results therefore underline the need for targeted psychosocial assessment and intervention. Female patients, regardless of treatment modality, appear to require more intensive screening and support for anxiety, depressive and somatoform symptoms. At the same time, structured interventions that enhance hope, goal setting and meaning in life, informed by existing hope theory and spiritual care frameworks, may be particularly beneficial and could be adapted differently for men and women. Overall, the gender specific differences documented here reinforce the importance of integrating psychological and existential dimensions into routine nephrology care for both dialysis and transplant populations.

Limitations

This study presents several limitations that should be considered when evaluating the results. Its cross-sectional design restricts the ability to draw causal conclusions or observe changes in psychological outcomes over time. The sample was recruited from a single clinical center, which may limit the generalizability of the findings to broader ESRD and transplant populations. All measures relied on self-report questionnaires, which are susceptible to recall bias, subjective interpretation, and social desirability influences, particularly relevant given the elevated Lie-scale tendencies identified in some participants. Additionally, although major exclusion criteria were applied, potential confounders such as comorbid psychiatric conditions, medication side effects, social support levels, and socioeconomic pressures were not fully controlled for and may have influenced symptom presentation. The use of convenience sampling also raises the possibility of selection bias. These limitations highlight the need for cautious interpretation and reinforce the importance of future studies with longitudinal and multi-center designs.

Conclusion

Despite these constraints, the study offers important insights into the psychological, personality, and existential functioning of patients with advanced kidney disease. The findings underscore the presence of significant emotional burden, particularly among women, as well as meaningful differences between ESRD and transplant patients in domains such as hope and meaning in life. These results support the integration of structured psychological assessment and gender-sensitive psychosocial interventions into routine nephrology care, with the aim of improving emotional resilience, treatment adherence, and overall quality of life.

ΠΕΡΙΛΗΨΗ

Ψυχική και υπαρξιακή εξουθένωση και αποπροσωποποίηση στην προχωρημένη νεφρική νόσο. Μια συγκριτική μελέτη σε ασθενείς με χρόνια νεφρική νόσο τελικού σταδίου, λήπτες μοσχευμάτων νεφρού και υγιείς μάρτυρες

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Εισαγωγή: Η χρόνια νεφρική νόσος (ΧΝΝ), και ιδιαίτερα η τελικού σταδίου νεφρική νόσος (ΤΣΝΝ), συνδέεται με σημαντικό ψυχολογικό φορτίο, συμπεριλαμβανομένων αυξημένων ποσοστών κατάθλιψης, άγχους και σωματικής δυσφορίας, ενώ η μεταμόσχευση νεφρού βελτιώνει τη σωματική υγεία χωρίς ωστόσο να εξαλείφει την ψυχολογική ευαλωτότητα. Προηγούμενες έρευνες έχουν δείξει ότι τα χαρακτηριστικά προσωπικότητας, οι τρόποι αντιμετώπισης, η ελπίδα και το νόημα στη ζωή επηρεάζουν σημαντικά την ψυχική προσαρμογή των ασθενών που υποβάλλονται σε θεραπείες υποκατάστασης της νεφρικής λειτουργίας.

Σκοπός: Ο σκοπός της παρούσας μελέτης ήταν να συγκρίνει την ψυχοπαθολογία, τα χαρακτηριστικά προσωπικότητας, την επαγγελματική εξουθένωση, την αποπροσωποποίηση, την ελπίδα και το νόημα στη ζωή μεταξύ τριών ομάδων: ασθενών με ΤΣΝΝ σε αιμοκάθαρση, ληπτών νεφρικού μοσχεύματος και υγιών ατόμων.

Υλικά και Μέθοδοι: Το δείγμα περιλάμβανε 100 ασθενείς (50 με ΤΣΝΝ σε αιμοκάθαρση και 50 λήπτες νεφρικού μοσχεύματος) και 50 υγιείς μάρτυρες με αντιστοιχία σε βασικά κοινωνικοδημογραφικά χαρακτηριστικά. Η συλλογή δεδομένων περιλάμβανε κοινωνικοδημογραφικά ερωτηματολόγια και επικυρωμένα ψυχομετρικά εργαλεία: SCL-90-R, Κλίμακα Αποπροσωποποίησης Cambridge (CDS), Ερωτηματολόγιο Επαγγελματικής Εξουθένωσης Maslach (MBI), Ερωτηματολόγιο Προσωπικότητας Eysenck (EPQ), Ερωτηματολόγιο Νοήματος στη Ζωή (MLQ) και Κλίμακα Ελπίδας Ενηλίκων (AHS). Η συμμετοχή ήταν εθελοντική, εξασφαλίστηκε η ανωνυμία, δόθηκε ενημερωμένη συγκατάθεση και εγκρίθηκε η μελέτη από την αρμόδια επιτροπή ηθικής. Η στατιστική ανάλυση περιλάμβανε περιγραφικά μέτρα, συγκρίσεις ομάδων και τιμές p με 95% διαστήματα εμπιστοσύνης.

Αποτελέσματα: Οι ασθενείς σημείωσαν υψηλότερες βαθμολογίες από τους υγιείς μάρτυρες στις περισσότερες υποκλίμακες του SCL-90-R, με τη ψυχωτικότητα να παρουσιάζει στατιστικά σημαντική διαφορά (p=0,019). Οι ασθενείς με ΤΣΝΝ εμφάνισαν υψηλότερα επίπεδα ψυχοπαθολογίας, συναισθηματικής εξάντλησης, μειωμένης προσωπικής επίτευξης και αποπροσωποποίησης σε σύγκριση με τους λήπτες μοσχεύματος, αν και μόνο η υποκλίμακα "αναζήτηση νοήματος" του MLQ εμφάνισε στατιστικά σημαντική διαφορά (p=0,007). Οι λήπτες μεταμόσχευσης εμφάνισαν υψηλότερα επίπεδα ελπίδας και στις δύο υποκλίμακες του AHS, χωρίς όμως στατιστική σημαντικότητα. Οι αναλύσεις φύλου έδειξαν ότι οι γυναίκες και στις δύο κλινικές ομάδες παρουσίασαν σημαντικά υψηλότερη σωματοποίηση, άγχος και ιδεοψυχαναγκαστικά συμπτώματα, ενώ οι άνδρες σημείωσαν υψηλότερες τιμές στις διαστάσεις της ελπίδας και του νοήματος.

Συμπεράσματα: Οι ασθενείς με ΤΣΝΝ και οι λήπτες νεφρικού μοσχεύματος παρουσιάζουν σημαντικό ψυχολογικό φορτίο σε σύγκριση με υγιή άτομα, με εμφανή πρότυπα διαφοροποίησης ανά φύλο. Οι ασθενείς με ΤΣΝΝ φαίνεται να αναζητούν περισσότερο υπαρξιακό νόημα, ενώ οι λήπτες μεταμόσχευσης εμφανίζουν ισχυρότερη ελπιδοφόρα σκέψη. Τα ευρήματα υπογραμμίζουν τη σημασία ενσωμάτωσης δομημένων ψυχολογικών αξιολογήσεων και εξατομικευμένων ψυχοκοινωνικών παρεμβάσεων στη ρουτίνα της νεφρολογικής φροντίδας, ώστε να ενισχυθεί η συναισθηματική ανθεκτικότητα και η συνολική ποιότητα ζωής.

Λέξεις-κλειδιά: Χρόνια νεφρική νόσος, Μεταμόσχευση νεφρού, Ψυχική υγεία, Ψυχολογική αξιολόγηση, Ποιότητα ζωής, Χρόνια ασθένεια.

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