

Quality of Life and Personality in Patients on Dialysis: A Preliminary Longitudinal Study on the Role of Motivation, Coping, and Social Support

Nicoleta Stoenescu

Department of Psychology, Faculty of Psychology and Educational Sciences, Alexandru Ioan Cuza University of Iasi, Romania.
nicoletastoenescu2021@gmail.com,
<https://orcid.org/0009-0005-5736-4491>

Ștefan Lucian Burlea

3rd Dental Medicine Department, Faculty of Dental Medicine, Grigore T. Popa University of Medicine and Pharmacy, Iași, Romania; stefan.burlea@umfiasi.ro,
<https://orcid.org/0009-0002-1376-5718>

Anamaria Ciubară

Phsihiatric Department, Faculty of General Medicine, Dunărea de Jos University of Medicine and Pharmacy, Galați, Romania; anamariaciubara@gmail.com,
<https://orcid.org/0000-0003-0740-3702>

* Corresponding author. E-mail: stefan.burlea@umfiasi.ro

Abstract: Objective. The aim of the research is to investigate the relationship between personality traits (conscientiousness and emotional stability) and quality of life in dialysis patients, through psychosocial mediation mechanisms (autonomous motivation, problem-focused coping and social support). The study also examines the longitudinal stability of these relationships and the differences between clinical groups defined according to medical indication and patient attitude towards kidney transplantation. **Materials and methods.** The preliminary study included 70 dialysis patients, assessed at two time points (T1 – beginning of the study, T2 – 6 months). Standardised instruments were used to assess personality (BFI-50), motivation (TSRQ), coping (Brief COPE), social support (ISEL) and quality of life (KDQOL-SF 1.3). Statistical analyses consisted of PROCESS Model 6 for testing serial mediation and mixed ANOVA for assessing longitudinal stability and between-group differences. **Results.** Personality influenced quality of life through significant indirect effects of autonomous motivation (T1), problem-focused coping (T2), and social support (T2), confirming the serial mediation model ($p < .05$). A full mediation effect was identified for conscientiousness, whereas emotional stability showed a partial mediation effect, highlighting distinct pathways through which personality traits influence quality of life. Between T1 and T2, significant decreases were observed in physical health, $F(1,66) = 2101.67, p < .01$, mental health, $F(1,66) = 18.41, p < .01$, as well as in psychosocial resources (autonomous motivation, $F(1,66) = 49.27, p < .01$; problem-focused coping, $F(1,66) = 26.44, p < .01$; social support, $F(1,66) = 49.37, p < .01$). Time $\times$ group interactions were observed for both physical health and problem-focused coping $F(3,66) = 3.08, p < .05$. **Conclusions.** The preliminary study confirms hypothesis H1, demonstrating that personality traits influence quality of life through psychosocial mechanisms, and hypothesis H2 was partially confirmed: the relationships of the model remained stable over time, but the differences between groups were limited, except for problem-focused coping. These results emphasise the importance of integrating psychosocial factors into clinical practice and will be complemented by the inclusion of data from T3 to test the robustness and stability of the proposed model.

Keywords: quality of life; personality; motivation; coping; social support; renal transplantation.

How to cite: Stoenescu, N., Burlea Ș. L., & Ciubară, A. (2026). Quality of life and personality in patients on dialysis: A preliminary longitudinal study on the role of motivation, coping, and social support. *BRAIN. Broad Research in Artificial Intelligence and Neuroscience*, 17(2), 435-448.
<https://doi.org/10.70594/brain/17.2/27>

1. Introduction

Chronic kidney disease (CKD) is a major public health problem, associated with significant increases in morbidity, mortality and a profound impact on the quality of life of patients, especially in the terminal stages, when dialysis becomes indispensable (Griva et al., 2010). International epidemiological data indicate that patients on dialysis frequently present with reduced levels of quality of life, compared with both the general population and patients with less advanced stages of the disease (Jha et al., 2013; McCrae and Costa, 1999). This decrease reflects not only the physical limitations and symptomatology associated with the disease, but also the psychological distress, uncertainty about the future and the burden of chronic treatment (Ryan and Deci, 2000).

In this context, contemporary literature emphasises the need for a biopsychosocial approach to CKD, which integrates psychological and social factors alongside medical ones in explaining adaptation to the disease and individual variations in quality of life (Carver et al., 1989; Cohen and Wills, 1985). Quality of life is considered a multidimensional construct, including dimensions of physical health, emotional functioning, and social relationships, and is influenced by the interaction between the patient's individual characteristics and their coping resources (John and Srivastava, 1999).

Individual factors crucial for adaptation to chronic illness include personality traits. The Big Five model provides a robust theoretical framework for understanding how stable personality differences influence health behaviours and psychological outcomes (Ryan and Connell, 1989). Empirical evidence consistently indicates that traits such as conscientiousness and emotional stability are associated with higher quality of life and more effective adaptation to chronic illness (Carver, 1997; Cohen and Hoberman, 1983). Conscientiousness is correlated with self-discipline, organisation, and taking responsibility for treatment, while emotional stability reflects the ability to regulate negative emotions and manage stress (Hays et al., 1994). Longitudinal studies suggest that these traits may influence not only the initial level of quality of life but also its trajectory over time in the context of chronic illness (Seica et al., 2009). In this context, the present study focuses specifically on conscientiousness and emotional stability, given their strong and consistent associations with health-related behaviours, emotional regulation, and treatment adherence in chronic illness contexts (Friedman and Kern, 2014; Vollrath, 2001). These traits are considered particularly relevant for understanding psychosocial adaptation and quality of life in dialysis patients.

However, the relationship between personality and quality of life is rarely straightforward. Contemporary health psychology models emphasise the role of motivational and behavioural mechanisms as explanatory links between personality traits and health outcomes (Hayes, 2018). Self-Determination Theory provides a relevant conceptual framework for understanding motivation in a medical context, highlighting the importance of autonomous motivation—characterised by the internalisation of treatment-related values and personal ownership of health behaviours (Menard, 1995). In patients with chronic diseases, autonomous motivation has been associated with better treatment compliance, effective self-regulation, and superior quality of life outcomes (Field, 2013).

Another essential mechanism in adaptation to chronic kidney disease is represented by coping strategies. According to transactional models of stress, problem-focused coping involves active efforts to manage stressful demands and has been associated with lower levels of psychological distress and better quality of life among dialysis patients (Friedman and Kern, 2014; Vollrath, 2001). However, the effectiveness of coping strategies depends on the clinical context and available resources and is influenced by both individual characteristics and the support provided by the social environment (MacKinnon et al., 2007).

Social support is a major protective factor in chronic diseases, acting as a buffer mechanism that attenuates the impact of stress on physical and mental health (Pagels et al., 2012). Emotional, instrumental, and informational support have been associated with reduced mortality, better psychological adjustment, and higher levels of quality of life (Eneanya et al., 2019; Kimmel et al.,

2003). In the case of dialysis patients, social support is essential for maintaining emotional balance and supporting engagement in treatment (Shahgholian and Yousefi, 2015).

Although numerous studies have separately investigated the role of personality, motivation, coping, and social support in adaptation to chronic kidney disease, research integrating these variables into an unified explanatory model remains limited. Furthermore, few studies have examined these relationships from a longitudinal perspective, analysing the stability of psychosocial mechanisms over time and the influence of specific clinical factors, such as the medical indication for transplantation and the patient's attitude towards this therapeutic option (Lopez-Vargas et al., 2014).

Therefore, the present study aims to investigate the relationship between personality traits (conscientiousness and emotional stability) and quality of life of dialysis patients, through autonomous motivation, problem-focused coping, and social support, using a longitudinal design. In addition, the study explores differences between clinical groups defined by medical indication and acceptance of renal transplantation, providing an applied perspective relevant to psychological practice in nephrology.

2. Materials and Methods

Participants and data collection

The study comprised 70 patients diagnosed with end-stage CKD, undergoing haemodialysis treatment for at least 3 months, recruited from public and private dialysis centres in Iași between November 2023 and June 2024. Participants were selected using a non-probability (convenience) sampling method, commonly used in clinical research, based on informed consent.

Inclusion criteria included age between 18 and 75 years, a confirmed diagnosis of end-stage CKD, the ability to understand and complete the questionnaires, and provision of written informed consent. Patients with major neurocognitive disorders, severe psychiatric conditions, severe sensory impairments, recent acute medical events, or involvement in intensive psychotherapy programmes were excluded.

The sample was evaluated longitudinally at two distinct time points (T1 and T2). There was no sample loss between the two stages (attrition = 0%), which represents an important strength of the longitudinal design and supports the internal validity of the findings.

Participants were classified into four clinical groups based on the combination of medical indication for transplantation and acceptance of the procedure (Table 1a). This structure enables comparisons between patients who are eligible and ineligible for transplantation, as well as analysis of differences in motivation and psychological openness towards the procedure.

Table 1a. Clinical group classification based on medical indication and transplant acceptance

Group	Medical indication	Transplant acceptance	n (%)	Clinical interpretation
G1	Yes	Yes	25 (35.7%)	Eligible and psychologically engaged
G2	Yes	No	17 (24.3%)	Eligible but ambivalent / resistant
G3	No	No	12 (17.1%)	Not eligible and disengaged
G4	No	Yes	16 (22.9%)	Not eligible but psychologically open

The questionnaires were administered during dialysis sessions (approximately 4 hours), under the supervision of the research and medical team. The first data collection wave (T1) took place between November 2023 and January 2024, and the second (T2) in May–June 2024, with a 6-month interval.

The data are preliminary and will be completed with a third assessment time point (T3) in the final stage of the study.

Instruments

The questionnaires applied in this study targeted both psychological and social characteristics and the perception of health-related quality of life in patients with CKD.

The Big Five Inventory – 50 (BFI-50) (John and Srivastava, 1999) is used to assess the five dimensions of personality. Conscientiousness and emotional stability were analysed in this study. The 5-point scale (1–5) demonstrated internal consistency of $\alpha = 0.80$ – 0.81 at T1 and $\alpha = 0.81$ – 0.82 at T2.

The Treatment Self-Regulation Questionnaire (TSRQ) (Ryan and Connell, 1989) is used to measure autonomous and controlled motivation for treatment, based on Self-Determination Theory. In this study, the autonomous motivation subscale was employed, with internal consistency of $\alpha = 0.85$ (T1) and $\alpha = 0.90$ (T2).

The Brief COPE (Brief COPE) (Carver, 1997) assesses coping strategies using 28 items, on a 4-point Likert scale. Only problem-focused strategies were analysed. Internal consistency was $\alpha = 0.79$ (T1) and $\alpha = 0.83$ (T2).

The Interpersonal Support Evaluation List (ISEL) (Cohen and Hoberman, 1983) measures perceived social support (material, emotional, and informational support, as well as social belonging). The scale contains 40 items rated on a 4-point scale (1–4), with internal consistency of $\alpha = 0.87$ (T1) and $\alpha = 0.89$ (T2).

The Kidney Disease Quality of Life – Short Form 1.3 (KDQOL-SF 1.3) (Hays et al., 1994; Seica et al., 2009) assesses quality of life in kidney disease across general and specific dimensions. Scores are transformed to a 0–100 scale, with internal consistency of $\alpha = 0.89$ (T1) and $\alpha = 0.90$ (T2).

Statistical analyses

Analyses were performed using IBM SPSS Statistics v20 and the PROCESS v4.2 macro (Hayes, 2018). Model 6 was used to test serial mediation (H1), while mixed ANOVA assessed longitudinal stability and between-group differences (H2). The statistical significance level was set at $p < .05$, and indirect effects were tested using bootstrapping (5000 resamples, 95% CI).

Ethical approval

The study was conducted in accordance with the principles of the Declaration of Helsinki, with the approval of the Ethics Committee of the "Alexandru Ioan Cuza" University of Iași (opinion no. 2487/09.12.2022). Participation was voluntary, with written informed consent, and data were collected respecting confidentiality and anonymity.

3. Preliminary Results

The data presented come from the first two collection waves (T1 and T2) for a sample of 70 patients undergoing haemodialysis treatment. The results are preliminary, to be completed with data from T3, which will allow for the final validation of the tested models.

3.1. Verification of Distribution and Relationships Between Variables

Normality analysis of the distributions (skewness between -3 and $+3$; kurtosis between -7 and $+7$) indicated values within acceptable limits for all variables (Table 1b).

Multicollinearity testing showed Tolerance values > 0.10 and VIF < 2 , which confirm the independence of the predictors, in accordance with recommendations in the methodological literature (Menard, 1995; Field, 2013).

Table 1b. Means, standard deviations, skewness and kurtosis coefficients for the study variables

Variables	Mean	SD	Skewness	Kurtosis
Physical health (T1)	168.24	25.68	-0.82	0.33
Mental health (T1)	93.14	20.82	-1.31	1.11
Conscientiousness (T1)	44.03	5.12	-1.65	3.73
Emotional stability (T1)	30.97	6.53	-0.61	-0.27
Autonomous regulation (T1)	5.90	0.70	-1.55	2.98
Problem-focused coping (T1)	3.31	0.53	-1.79	3.03
Social support (T1)	83.31	23.72	-1.63	1.75
Physical health (T2)	158.34	27.81	-0.88	-0.01
Mental health (T2)	86.51	19.44	-0.83	-0.53
Conscientiousness (T2)	43.00	5.18	-0.99	0.64
Emotional stability (T2)	28.66	6.54	-0.04	-0.60
Autonomous regulation (T2)	5.44	1.00	-1.16	0.91
Problem-focused coping (T2)	3.51	0.55	-1.34	2.30
Social support (T2)	76.21	21.95	-1.42	1.33

3.2. Correlation Analysis

Pearson correlations (Table 2) indicated positive and significant relationships between all variables studied, both at T1 and T2 ($p < .01$). At both assessment times, physical and mental health were strongly associated with each other (T1: $r = .77$; T2: $r = .90$), as well as with all psychosocial variables included in the model. Conscientiousness and emotional stability showed moderate to high positive correlations with autonomous motivation (T1: $r = .46$ -.52; T2: $r = .59$ -.64) and with social support (T1: $r = .58$ -.77; T2: $r = .48$ -.78), suggesting that stable personality traits are associated with more consistent motivational and relational resources. Additionally, the relationships between problem-focused coping and mental health were among the highest (T1: $r = .85$; T2: $r = .55$), confirming the role of these strategies in maintaining emotional balance.

The consistency and stability of these correlations between T1 and T2 support the longitudinal consistency of the model and justify the application of subsequent serial mediation analyses.

Table 2. Pearson correlations among study variables at T1 and T2

Variables	1	2	3	4	5	6	7
T1							
1. Physical health	—						
2. Mental health	.770**	—					
3. Conscientiousness	.732**	.698**	—				
4. Emotional stability	.663**	.700**	.521**	—			
5. Autonomous regulation	.675**	.681**	.458**	.520**	—		
6. Problem-focused coping	.653**	.850**	.624**	.646**	.637**	—	
7. Social support	.789**	.813**	.767**	.578**	.668**	.788**	—
T2							
1. Physical health	—						
2. Mental health	.904**	—					
3. Conscientiousness	.678**	.655**	—				
4. Emotional stability	.723**	.745**	.453**	—			
5. Autonomous regulation	.730**	.744**	.596**	.644**	—		
6. Problem-focused coping	.500**	.551**	.588**	.483**	.696**	—	
7. Social support	.766**	.779**	.780**	.478**	.770**	.679**	—

Notes. N = 70. $p < .01$ (two-tailed). All correlations are positive and significant.

3.3. The Relationship Between Personality Traits and Quality of Life: The Role of Psychosocial Mediators (H1)

Serial mediation analysis (Model 6, PROCESS v4.2; Hayes, 2018) tested four distinct models, corresponding to the two personality traits (conscientiousness and emotional stability) and the two dimensions of quality of life (physical health and mental health). For each model, successive mediation routes involving autonomous motivation (T1), problem-focused coping (T2), and social support (T2) were analysed as mechanisms through which personality influenced quality of life at the second time point (T2).

Conscientiousness (T1) → Physical health (T2). The total effect was significant ($\beta = .56, p < .01$), but the direct effect was no longer significant after including the mediators ($\beta = .08, p > .05$), confirming full mediation. The total indirect effect ($\beta = .48, 95\% \text{ CI } [.26, .69]$) and the full serial path ($\beta = .04, 95\% \text{ CI } [.01, .08]$) suggest that conscientiousness is associated with pathways involving self-regulation, active coping, and social support, which are, in turn, linked to better physical health.

Other simple mediations were observed through autonomous motivation ($\beta = .12, 95\% \text{ CI } [.02, .24]$), through social support ($\beta = .27, 95\% \text{ CI } [.12, .48]$), and through the combination of autonomous motivation–social support ($\beta = .10, 95\% \text{ CI } [.01, .24]$) (Table 3, Figure 1).

Table 3. Indirect effects of Conscientiousness (T1) on Physical Health (T2) through the serial mediators Autonomous Regulation (T1), Problem-Focused Coping (T2), and Social Support (T2) (standardised beta coefficients)

Effects	Beta	95% CI
Total effect Conscientiousness (T1) → Physical Health (T2)	.56**	
Direct effect Conscientiousness (T1) → Physical Health (T2)	.08	
Total indirect effect Conscientiousness (T1) → Physical Health (T2)	.48	[.26, .69]
Conscientiousness (T1) → Autonomous Regulation (T1) → Physical Health (T2)	.12	[.02, .24]
Conscientiousness (T1) → Problem-Focused Coping (T2) → Physical Health (T2)	-.04	[-.13, .03]
Conscientiousness (T1) → Social Support (T2) → Physical Health (T2)	.27	[.12, .48]
Conscientiousness (T1) → Autonomous Regulation (T1) → Problem-Focused Coping (T2) → Physical Health (T2)	-.04	[-.13, .03]
Conscientiousness (T1) → Autonomous Regulation (T1) → Social Support (T2) → Physical Health (T2)	.10	[.01, .24]
Conscientiousness (T1) → Problem-Focused Coping (T2) → Social Support (T2) → Physical Health (T2)	.04	[-.00, .10]
Conscientiousness (T1) → Autonomous Regulation (T1) → Problem-Focused Coping (T2) → Social Support (T2) → Physical Health (T2)	.04	[.01, .08]

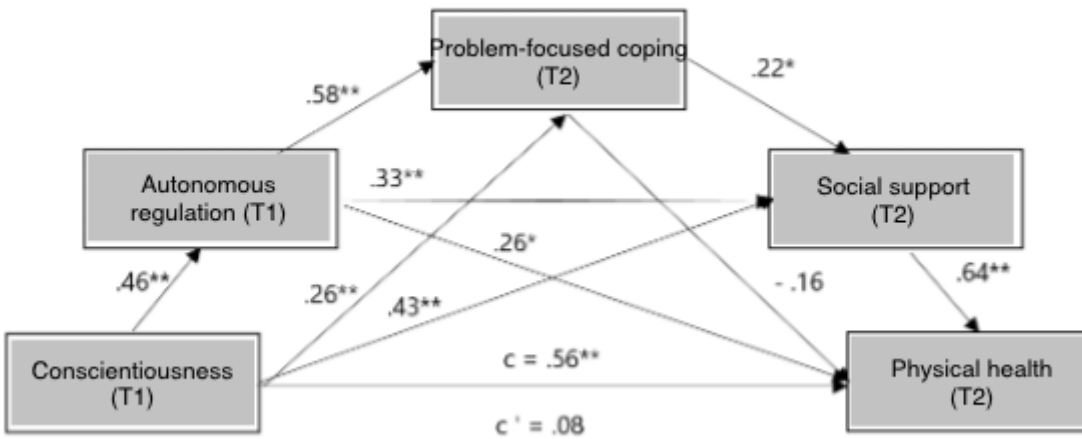


Figure 1. Serial mediation model illustrating the relationship between conscientiousness and physical health via autonomous regulation, problem-focused coping, and social support (standardized regression coefficients).

Conscientiousness (T1) → Mental health (T2). The total effect was significant ($\beta = .54, p < .01$), and the direct effect was no longer significant ($\beta = .00, p > .05$), confirming full mediation. The total indirect effect ($\beta = .54, 95\% \text{ CI } [.32, .75]$) and the full serial path ($\beta = .04, 95\% \text{ CI } [.01, .09]$) suggest that pathways involving autonomous motivation and social support are associated with mental health outcomes.

Additional mediation effects were observed through social support ($\beta = .29, 95\% \text{ CI } [.15, .49]$) and through the combination of autonomous motivation and social support ($\beta = .11, 95\% \text{ CI } [.01, .25]$) (Table 4, Figure 2).

Table 4. Indirect effects of Conscientiousness (T1) on Mental Health (T2) through the serial mediators Autonomous Regulation (T1), Problem-Focused Coping (T2), and Social Support (T2) (standardised beta coefficients)

Effects	Beta	95% CI
Total effect Conscientiousness (T1) → Mental Health (T2)	.54**	
Direct effect Conscientiousness (T1) → Mental Health (T2)	.00	
Total indirect effect Conscientiousness (T1) → Mental Health (T2)	.54	[.32, .75]
Conscientiousness (T1) → Autonomous Regulation (T1) → Mental Health (T2)	.07	[-.03, .19]
Conscientiousness (T1) → Problem-Focused Coping (T2) → Mental Health (T2)	-.01	[-.08, .06]
Conscientiousness (T1) → Social Support (T2) → Mental Health (T2)	.29	[.15, .49]
Conscientiousness (T1) → Autonomous Regulation (T1) → Problem-Focused Coping (T2) → Mental Health (T2)	-.01	[-.08, .06]
Conscientiousness (T1) → Autonomous Regulation (T1) → Social Support (T2) → Mental Health (T2)	.11	[.01, .25]
Conscientiousness (T1) → Problem-Focused Coping (T2) → Social Support (T2) → Mental Health (T2)	.04	[-.00, .11]
Conscientiousness (T1) → Autonomous Regulation (T1) → Problem-Focused Coping (T2) → Social Support (T2) → Mental Health (T2)	.04	[.01, .09]

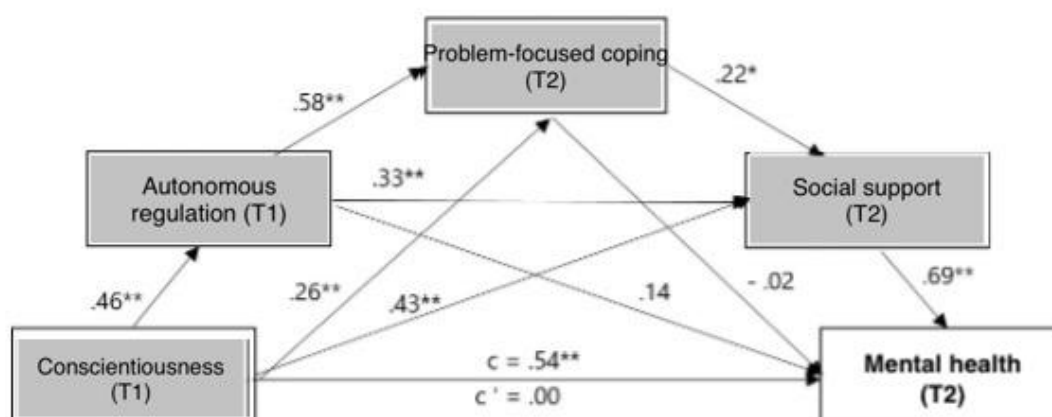


Figure 2. Serial mediation model illustrating the relationship between conscientiousness and mental health via autonomous regulation, problem-focused coping, and social support (standardized regression coefficients)

Emotional stability (T1) → Physical health (T2). The total effect was significant ($\beta = .61, p < .01$), and the direct effect remained significant ($\beta = .36, p < .01$), confirming partial mediation. The total indirect effect ($\beta = .25, 95\% \text{ CI } [.08, .40]$) and the full serial path ($\beta = .04, 95\% \text{ CI } [.01, .08]$) indicate that emotional stability favors self-regulation, active coping, and access to social support. Additional mediations: coping → social support ($\beta = .08, 95\% \text{ CI } [.01, .16]$) and self-regulation → social support ($\beta = .14, 95\% \text{ CI } [.02, .31]$). Two inconsistent effects were

identified by coping ($\beta = -.10$, 95% CI $[-.21, -.01]$) and by the chain autonomic regulation $\rightarrow$ coping ($\beta = -.08$, 95% CI $[-.20, -.01]$). (Table 5, Figure 3)

Table 5. Indirect effects of Emotional Stability (T1) on Physical Health (T2) through the serial mediators Autonomous Regulation (T1), Problem-Focused Coping (T2), and Social Support (T2) (standardized beta coefficients)

Effects	Beta	95% CI
Total effect Emotional Stability (T1) $\rightarrow$ Physical Health (T2)	.61**	
Direct effect Emotional Stability (T1) $\rightarrow$ Physical Health (T2)	.36**	
Total indirect effect Emotional Stability (T1) $\rightarrow$ Physical Health (T2)	.25	[.08, .40]
Emotional Stability (T1) $\rightarrow$ Autonomous Regulation (T1) $\rightarrow$ Physical Health (T2)	.10	[-.01, .21]
Emotional Stability (T1) $\rightarrow$ Problem-Focused Coping (T2) $\rightarrow$ Physical Health (T2)	-.10	[-.21, -.01]
Emotional Stability (T1) $\rightarrow$ Social Support (T2) $\rightarrow$ Physical Health (T2)	.05	[-.09, .19]
Emotional Stability (T1) $\rightarrow$ Autonomous Regulation (T1) $\rightarrow$ Problem-Focused Coping (T2) $\rightarrow$ Physical Health (T2)	-.08	[-.20, -.01]
Emotional Stability (T1) $\rightarrow$ Autonomous Regulation (T1) $\rightarrow$ Social Support (T2) $\rightarrow$ Physical Health (T2)	.14	[.02, .31]
Emotional Stability (T1) $\rightarrow$ Problem-Focused Coping (T2) $\rightarrow$ Social Support (T2) $\rightarrow$ Physical Health (T2)	.08	[.01, .16]
Emotional Stability (T1) $\rightarrow$ Autonomous Regulation (T1) $\rightarrow$ Problem-Focused Coping (T2) $\rightarrow$ Social Support (T2) $\rightarrow$ Physical Health (T2)	.06	[.01, .15]

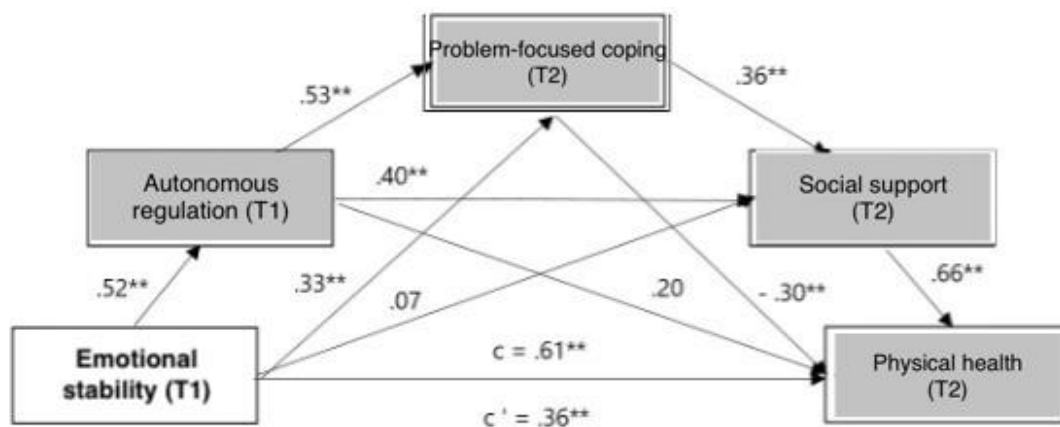


Figure 3. Serial mediation model illustrating the relationship between emotional stability and physical health via autonomous regulation, problem-focused coping, and social support (standardized regression coefficients)

Emotional stability (T1) $\rightarrow$ Mental health (T2). The total effect was significant ($\beta = .60$, $p < .01$), and the direct effect ($\beta = .31$, $p < .01$) indicated partial mediation. The total indirect effect ($\beta = .28$, 95% CI $[.11, .43]$) and the full serial path ($\beta = .06$, 95% CI $[.01, .14]$) confirm that self-regulation and active coping support mental health by facilitating social support.

An inconsistent effect was also identified ($\beta = -.05$, 95% CI $[-.14, -.03]$), suggesting that certain forms of coping may reduce the benefits of emotional stability (see Table 6, Figure 4).

Table 6. Indirect effects of Emotional Stability (T1) on Mental Health (T2) through the serial mediators Autonomous Regulation (T1), Problem-Focused Coping (T2), and Social Support (T2) (standardised beta coefficients)

Effects	Beta	95% CI
Total effect Emotional Stability (T1) → Mental Health (T2)	.60**	
Direct effect Emotional Stability (T1) → Mental Health (T2)	.31**	
Total indirect effect Emotional Stability (T1) → Mental Health (T2)	.28	[.11, .43]
Emotional Stability (T1) → Autonomous Regulation (T1) → Mental Health (T2)	.05	[−.06, .14]
Emotional Stability (T1) → Problem-Focused Coping (T2) → Mental Health (T2)	−.05	[−.14, −.03]
Emotional Stability (T1) → Social Support (T2) → Mental Health (T2)	.05	[−.08, .19]
Emotional Stability (T1) → Autonomous Regulation (T1) → Problem-Focused Coping (T2) → Mental Health (T2)	−.04	[−.12, .02]
Emotional Stability (T1) → Autonomous Regulation (T1) → Social Support (T2) → Mental Health (T2)	.14	[.02, .30]
Emotional Stability (T1) → Problem-Focused Coping (T2) → Social Support (T2) → Mental Health (T2)	.08	[.01, .16]
Emotional Stability (T1) → Autonomous Regulation (T1) → Problem-Focused Coping (T2) → Social Support (T2) → Mental Health (T2)	.06	[.01, .14]

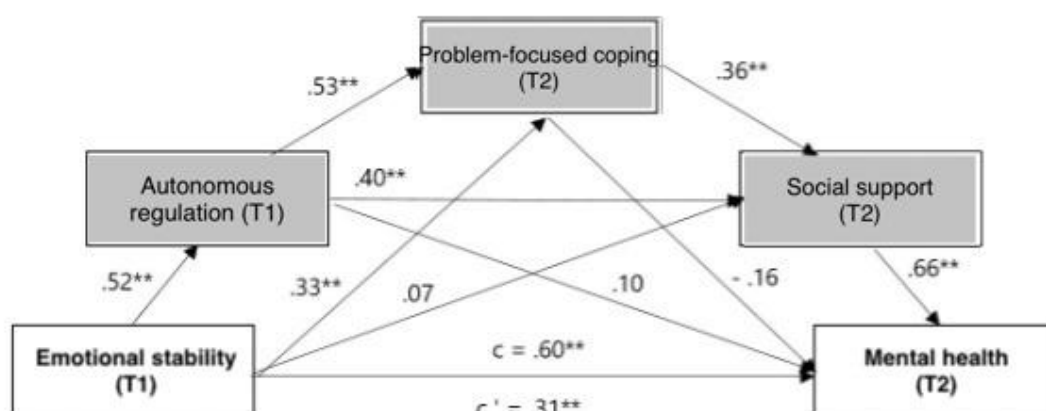


Figure 4. Serial mediation model illustrating the relationship between emotional stability and mental health via autonomous regulation, problem-focused coping, and social support (standardised regression coefficients).

4. Longitudinal Stability and Differences Between Groups (H2)

The analysis was performed by mixed ANOVA with repeated measures (Repeated Measures ANOVA), with the time of assessment (T1, T2) as the within-subject factor and the clinical group (G1–G4) as the between-subject factor.

A main effect of time on physical health was identified, $F(1, 66) = 2101.67$, $p < .01$, with a decrease from T1 ($M = 168.24$) to T2 ($M = 158.34$), as well as a significant time $\times$ group interaction, $F(3, 66) = 4.08$, $p < .01$. Pairwise analyses showed significant decreases in G1 and G2 ($p < .05$), but not in G3 and G4.

For mental health, a main effect of time was found, $F(1, 66) = 18.41$, $p < .01$, with no significant interactions with groups.

Psychosocial variables showed significant decreases between T1 and T2: conscientiousness, $F(1, 66) = 20.17$, $p < .01$; emotional stability, $F(1, 66) = 22.90$, $p < .01$; autonomic regulation, $F(1, 66) = 49.27$, $p < .01$; problem-focused coping, $F(1, 66) = 26.44$, $p < .01$; social support, $F(1, 66) =$

49.37, $p < .01$. A significant interaction was also observed for problem-focused coping, $F(3, 66) = 3.08$, $p < .05$, with significant decreases observed in G2, G3, and G4 ($p < .05$), but relative stability in G1 ($p > .05$).

Overall, the results support the structural stability of the relationships between variables, along with a trend of decreasing physical, mental health, and psychosocial resources between T1 and T2. Group G1 (with indication and acceptance) showed the best maintenance of coping and adaptive resources (Table 7).

Table 7. Results of the mixed ANOVA for physical health, mental health, and psychosocial variables across T1 and T2, by clinical group

Variable	Main Effect Time (F, p)	M(T1)	M(T2)	Interaction Effect Time $\times$ Group (F, p)	Interpretation
Physical health	$F(1,66) = 2101.67$, $p < .01$	168.24	158.34	$F(3,66) = 4.08$, $p < .01$	Significant decline over time; interaction with group ($\downarrow$ in G1, G2)
Mental health	$F(1,66) = 18.41$, $p < .01$	93.14	86.51	$F(3,66) = 0.84$, $p > .05$	Significant declines; no group interaction
Conscientiousness	$F(1,66) = 20.17$, $p < .01$	44.55	43.00	$F(3,66) = 1.31$, $p > .05$	Significant declines; stable across groups
Emotional stability	$F(1,66) = 22.90$, $p < .01$	30.97	28.83	$F(3,66) = 0.32$, $p > .05$	Significant declines; stable across groups
Autonomous regulation	$F(1,66) = 49.27$, $p < .01$	5.90	5.44	$F(3,66) = 0.38$, $p > .05$	Significant declines; no interaction
Problem-focused coping	$F(1,66) = 26.44$, $p < .01$	3.31	3.51	$F(3,66) = 3.08$, $p < .05$	Significant declines; interaction ($\downarrow$ in G2–G4, stable in G1)
Social support	$F(1,66) = 49.37$, $p < .01$	83.31	76.21	$F(3,66) = 0.54$, $p > .05$	Significant declines; no group effect

Notes. M = Mean; T1 = first measurement; T2 = second measurement. All effects were tested using mixed ANOVA with one within-subject factor (time) and one between-subject factor (clinical group). Significant effects are reported at $p < .05$.

5. Discussions

The present study suggests that the effect of personality traits on quality of life in dialysis patients is mediated through key psychosocial mechanisms—autonomous motivation, problem-focused coping, and social support—within a theoretically coherent and empirically supported serial mediation model. Specifically, conscientiousness and emotional stability assessed at T1 are associated with higher levels of physical and mental health at T2, but the pattern of association differs: for conscientiousness, full mediation was observed, whereas for emotional stability, partial mediation (concurrent direct and indirect effects) was identified. These results are congruent with the literature showing that stable traits influence health outcomes through motivational and relational pathways (Friedman & Kern, 2014; Vollrath, 2001), with the role of autonomous motivation in the internalisation of health behaviours (Ryan & Deci, 2000), and with the function of adaptive coping in maintaining psychological balance (Carver et al., 1989).

An important result of the study is the relevance of the mediation chain (T1 motivation $\rightarrow$ T2 coping $\rightarrow$ T2 social support), significant and stable in all analyses. This sequence suggests a progressive self-regulation pattern, whereby favourable personality traits are associated with

stronger autonomous motivation, which in turn is linked to more active problem-focused coping and greater mobilisation of social resources, ultimately contributing to higher quality of life.

The identification of inconsistent (negative) mediation effects in pathways involving problem-focused coping suggests, in line with the chronic stress literature (MacKinnon et al., 2007), that excessive reliance on active coping strategies in demanding clinical contexts may become counterproductive, generating emotional costs and frustration. This highlights that not all active coping is adaptive, and relevance and appropriateness to the context are essential. In long-term conditions such as dialysis, sustained efforts to actively manage stressors may become less effective over time, particularly in the context of cumulative psychological burden and resource depletion. In this regard, certain forms of problem-focused coping may reflect increased awareness of illness-related limitations rather than effective adaptation, potentially contributing to emotional strain. These findings highlight the dynamic and context-dependent nature of coping processes in chronic disease contexts (Vollrath, 2001), emphasising the need to consider both adaptive and maladaptive aspects of coping.

From a longitudinal perspective, Hypothesis 2 was partially confirmed. The relationships between the model variables remained conceptually stable between T1 and T2, but mean scores declined significantly for physical health, mental health, and psychosocial resources—a natural trend in the course of a severe chronic illness (Pagels et al., 2012; Eneanya et al., 2019). Thus, although the explanatory mechanisms remain stable, patients' resources tend to erode over time, amid uncertainty about transplantation (Kimmel et al., 2003; Shahgholian & Yousefi, 2015).

The lack of consistent differences between clinical groups partially contradicts the hypothesis that I+/A+ patients would benefit from a robust psychological advantage (Lopez-Vargas et al., 2014). One possible explanation is the phenomenon of “*erosion of adaptive expectations*”, characteristic of patients on the waiting list (Tsay et al., 2005) for whom chronological uncertainty and donor rarity can gradually diminish autonomous motivation and involvement, even in the presence of medical eligibility (Ryan and Deci, 2000). In this context, waiting time could function as a moderator (or mediator) between transplant acceptance and quality of life, through effects on hope, coping and social support (Carver et al., 1989; Cohen and Wills, 1985).

5.1. Clinical Implications

The observed decline in psychosocial resources over time suggests a progressive weakening of patients' self-regulatory capacity, affecting motivation, coping, and perceived social support. From a clinical perspective, this pattern indicates the need for structured and continuous psychological interventions targeting these key mechanisms.

Specifically, interventions grounded in self-determination theory may support the maintenance of autonomous motivation by clarifying personal values, the meaning of treatment, and the sense of control (Ryan and Deci, 2000). In parallel, coping-focused interventions, such as coping skills training or stress management programmes, may help patients adapt their strategies in response to chronic and difficult-to-control stressors (Carver et al., 1989; Carver, 1997).

Additionally, strengthening social support through family involvement, support groups, or patient networks may buffer the negative effects of long-term treatment and reduce psychological burden (Cohen & Wills, 1985). Given the extended duration of dialysis sessions, these interventions can be feasibly integrated into routine clinical care, providing continuous and context-adapted psychological support.

For vulnerable profiles (I+/A– and I–/A–), differentiated interventions are recommended. In patients with medical indication but low acceptance (I+/A–), interventions should focus on reducing ambivalence and decision-related anxiety through techniques such as motivational interviewing, clarification of personal values, and exploration of transplant-related fears.

In contrast, for patients without indication and with low acceptance (I–/A–), interventions may aim at rebuilding hope and facilitating social reconnection. These may include supportive

interventions, activation of social support networks, and engagement in patient groups, with the goal of reducing social withdrawal, restoring meaning, and increasing daily life engagement.

This differentiation highlights the need to tailor psychological interventions to the patient's clinical and motivational profile in order to optimise long-term outcomes.

5.2. Strengths and Limitations

The strength of the study lies in the integration of a complex explanatory model within a longitudinal design, providing an ecological perspective on psychosocial adjustment to dialysis. However, the study is preliminary, with a relatively small sample size ($N = 70$) and convenience sampling, which may limit the statistical power, particularly for detecting smaller indirect effects in complex serial mediation models, as well as the generalisability of the findings. In this regard, the results should be interpreted with caution, as they are more representative of the specific clinical sample investigated rather than the broader population of dialysis patients.

At the same time, the longitudinal design and the absence of attrition represent important methodological strengths that support the internal validity of the findings.

The reliance on self-report measures may introduce common method bias, potentially inflating the associations between variables. However, all instruments used are well-validated and widely applied in health psychology research, which supports the reliability of the findings. Additionally, although relevant medical variables (e.g., comorbidities, duration of dialysis, clinical complications) were collected, they were not included as covariates in the present analyses in order to preserve statistical power and avoid overfitting, given the sample size and model complexity. Their inclusion is planned in future analyses.

Subgroup analyses were not sufficiently powered for stable bootstrap estimates, and the observational design does not allow for firm causal inferences.

5.3. Future Directions

This preliminary study contributes to the literature by highlighting the complex role of personality and psychosocial resources in the quality of life of dialysis patients. The preliminary nature of the study reflects the current availability of data from two time points (T1–T2) within an ongoing longitudinal research framework.

Future research should include a larger sample and a third measurement time (T3), which will allow for a more robust validation of the proposed serial mediation model, increased statistical power, and improved generalisability of the findings. In addition, future analyses will incorporate relevant medical variables (e.g., duration of dialysis, comorbidities, and dialysis-related complications), which were collected but not included in the present models in order to preserve statistical power.

Further methodological developments may include the use of structural equation modelling and the examination of additional mechanisms (e.g., waiting time as a moderator or mediator). In addition, the development and evaluation of psychological interventions using pre–post designs (e.g., motivational and coping training), assessed through KDQOL-SF indicators, is recommended.

6. Conclusions

The results of this preliminary study support the essential role of personality traits in explaining the quality of life of dialysis patients, through psychosocial mechanisms mediated by autonomous motivation, problem-focused coping, and social support.

Hypothesis H1 was supported: conscientiousness and emotional stability, assessed at T1, influence physical and mental health at T2 through significant mediation effects. Conscientiousness acts exclusively indirectly, through a total mediation, while emotional stability maintains both direct and indirect effects, indicating a partial mediation. Thus, personality does not act in isolation, but modulates the functioning of motivational and relational mechanisms that support patients' adaptation to the disease.

Hypothesis H2 was partially supported: the mediating relationships remained relatively stable between T1 and T2, but mean levels of physical health, mental health, and psychosocial resources decreased significantly over time—a pattern consistent with the progression of chronic illness. Differences between clinical groups were limited; however, significant time $\times$ group interactions were observed for physical health and problem-focused coping, suggesting a potential role of decision-making profile in the maintenance of adaptive strategies.

Overall, these results support the integration of personality traits and psychosocial resources into clinical and psychological support strategies for patients with chronic kidney disease. The study makes a theoretical and applied contribution by highlighting a coherent explanatory model with clinical valences, and substantiates future research directions: sample expansion, inclusion of the T3 moment and development of intervention programmes focused on motivation, coping and social support.

The findings also highlight the phenomenon of “erosion of adaptive expectations” in patients undergoing long-term dialysis, suggesting that prolonged uncertainty and treatment burden may progressively reduce motivation, engagement, and psychosocial resources. This underscores the importance of continuous psychological support and tailored interventions in this population.

Conflict of Interest and Funding

The authors declare that there are no conflicts of interest. The research did not benefit from external funding sources.

References

- Carver, C. S. (1997). *You want to measure coping but your protocol's too long: Consider the brief COPE*. *International Journal of Behavioral Medicine*, 4(1), 92–100. https://doi.org/10.1207/s15327558ijbm0401_6
- Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). *Assessing coping strategies: A theoretically based approach*. *Journal of Personality and Social Psychology*, 56(2), 267–283. <https://doi.org/10.1037/0022-3514.56.2.267>
- Cohen, S., & Hoberman, H. M. (1983). *Positive events and social supports as buffers of life change stress*. *Journal of Applied Social Psychology*, 13(2), 99–125. <https://doi.org/10.1111/j.1559-1816.1983.tb02325.x>
- Cohen, S., & Wills, T. A. (1985). *Stress, social support, and the buffering hypothesis*. *Psychological Bulletin*, 98(2), 310–357. <https://doi.org/10.1037/0033-2909.98.2.310>
- Eneanya, N. D., Maddux, D. W., Reviriego-Mendoza, M. M., Larkin, J. W., Usvyat, L. A., van der Sande, F. M., Kooman, J. P., & Maddux, F. W. (2019). *Longitudinal patterns of health-related quality of life and dialysis modality: A national cohort study*. *BMC Nephrology*, 20(1), 7. <https://doi.org/10.1186/s12882-018-1198-5>
- Field, A. (2013). *Discovering statistics using IBM SPSS statistics* (4th ed.). Sage Publications.
- Friedman, H. S., & Kern, M. L. (2014). *Personality, well-being, and health*. *Annual Review of Psychology*, 65, 719–742. <https://doi.org/10.1146/annurev-psych-010213-115123>
- Griva, K., Davenport, A., Harrison, M., & Newman, S. (2010). *An evaluation of illness, treatment perceptions, and depression in hospital- vs. home-based dialysis modalities*. *Journal of Psychosomatic Research*, 69(4), 363–370. <https://doi.org/10.1016/j.jpsychores.2010.04.008>
- Hayes, A. F. (2018). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (2nd ed.). Guilford Press.
- Hays, R. D., Kallich, J. D., Mapes, D. L., Coons, S. J., & Carter, W. B. (1994). *Development of the kidney disease quality of life (KDQOL) instrument*. *Quality of Life Research*, 3(5), 329–338. <https://doi.org/10.1007/BF00451725>
- Jha, V., Garcia-Garcia, G., Iseki, K., Li, Z., Naicker, S., Plattner, B., Saran, R., Wang, A. Y., & Yang, C. W. (2013). *Chronic kidney disease: Global dimension and perspectives*. *The Lancet*, 382(9888), 260–272. [https://doi.org/10.1016/S0140-6736\(13\)60687-X](https://doi.org/10.1016/S0140-6736(13)60687-X)

- John, O. P., & Srivastava, S. (1999). *The Big Five trait taxonomy: History, measurement, and theoretical perspectives*. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (2nd ed., pp. 102–138). Guilford Press.
- Kimmel, P. L., Emont, S. L., Newmann, J. M., Danko, H., & Moss, A. H. (2003). *ESRD patient quality of life: Symptoms, spiritual beliefs, psychosocial factors, and ethnicity*. *American Journal of Kidney Diseases*, 42(4), 713–721. [https://doi.org/10.1016/S0272-6386\(03\)00907-7](https://doi.org/10.1016/S0272-6386(03)00907-7)
- Lopez-Vargas, P. A., Tong, A., Phoon, R. K., Chadban, S. J., Shen, Y., & Craig, J. C. (2014). *Knowledge deficit of patients with stage 1–4 CKD: A focus group study*. *Nephrology*, 19(4), 234–243. <https://doi.org/10.1111/nep.12206>
- MacKinnon, D. P., Fairchild, A. J., & Fritz, M. S. (2007). *Mediation analysis*. *Annual Review of Psychology*, 58, 593–614. <https://doi.org/10.1146/annurev.psych.58.110405.085542>
- McCrae, R. R., & Costa, P. T., Jr. (1999). *A five-factor theory of personality*. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (2nd ed., pp. 139–153). Guilford Press.
- Menard, S. (1995). *Applied logistic regression analysis*. Sage Publications.
- Pagels, A. A., Söderkvist, B. K., Medin, C., Hylander, B., & Heiwe, S. (2012). *Health-related quality of life in different stages of chronic kidney disease and at initiation of dialysis treatment*. *Health and Quality of Life Outcomes*, 10, 71. <https://doi.org/10.1186/1477-7525-10-71>
- Ryan, R. M., & Connell, J. P. (1989). *Perceived locus of causality and internalization: Examining reasons for acting in two domains*. *Journal of Personality and Social Psychology*, 57(5), 749–761. <https://doi.org/10.1037/0022-3514.57.5.749>
- Ryan, R. M., & Deci, E. L. (2000). *The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior*. *Psychological Inquiry*, 11(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01
- Seica, A., Segall, L., Verzan, C., Văduva, N., Madincea, M., Rusoiu, S., Cristea, S., Ștefan, M., Șerbănescu, D., Moroșanu, P., Grăjdeanu, L., Andronache, R., Nechita, M., Dragoș, D., Dronca, A., Gusbeth-Tatomir, P., Mircescu, G., & Covic, A. (2009). *Factors affecting the quality of life of haemodialysis patients from Romania: A multicentric study*. *Nephrology Dialysis Transplantation*, 24(2), 626–629. <https://doi.org/10.1093/ndt/gfn506>
- Shahgholian, N., & Yousefi, H. (2015). *Supporting hemodialysis patients: A phenomenological study*. *Iranian Journal of Nursing and Midwifery Research*, 20(5), 626–633. <https://doi.org/10.4103/1735-9066.164514>
- Tsay, S. L., Lee, Y. H., & Lee, Y. C. (2005). *Effects of an adaptation training programme for patients with end-stage renal disease*. *Journal of Advanced Nursing*, 50(1), 39–46. <https://doi.org/10.1111/j.1365-2648.2004.03347.x>
- Vollrath, M. (2001). *Personality and stress*. In A. Baum, T. A. Revenson, & J. E. Singer (Eds.), *Handbook of health psychology* (pp. 347–363). Lawrence Erlbaum Associates.