

PERCEIVED STRESS AND COPING MECHANISMS AS DETERMINING FACTORS OF THE QUALITY OF LIFE FOR CAREGIVERS OF PATIENTS WITH CHRONIC DISEASES IN ROMANIA

Maria Marchiș¹, Magdalena Iorga^{2,3*}, Camelia Soponaru³, T. Ciuhodaru⁴

Arcadia Hospital of Iasi, Romania

1. Department of Clinical Psychology

“Grigore T. Popa” University of Medicine and Pharmacy Iasi, Romania

2. Faculty of Medicine

“Alexandru Ioan Cuza” University, Iasi, Romania

3. Faculty of Psychology and Educational Sciences

4. “Prof. Dr. N. Oblu” Emergency Clinical Hospital Iasi, Romania

*Corresponding author. E-mail: magdalena.iorga@umfiiasi.ro

PERCEIVED STRESS AND COPING MECHANISMS AS DETERMINING FACTORS OF THE QUALITY OF LIFE FOR CAREGIVERS OF PATIENTS WITH CHRONIC DISEASES IN ROMANIA (Abstract): **The objective of this study** was to identify how the impact of perceived stress and the coping mechanisms used by caregivers of patients with chronic diseases in Romania determine their quality of life (QoL). **Materials and methods:** 69 caregivers of patients with chronic diseases participated in the study. The data resulted from the completion by the caregivers of the Perceived Stress Questionnaire (PSQ), the COPE scale, and the World Health Organization Quality-of-Life Scale (WHOQOL-BREF), along with a series of questions related to demographic data, such as gender, age, the environment of origin, the educational level, the civil status, the degree of kinship with the patient, the time since finding out the diagnosis, and the patient’s diagnosis. **Results:** The findings indicate that there was no significant correlation between perceived stress and QoL. High scores on planning were associated with high scores on QoL, and high scores on restraint from action were associated with low scores on QoL. As for carers, spouses had higher QoL scores compared to the children of the patient with a chronic disease, but also in comparison with the caregivers who were the mother or the father. Caregivers with high scores for pessimism regarding the diagnosis obtained higher QoL scores compared to caregivers who were hopeless. Within the predictive model composed of perceived stress and coping styles, the predictors were restraint from action ($\beta = .416$), denial ($\beta = .397$), mental passivity ($\beta = .155$), and recourse to alcohol-drugs ($\beta = -.238$), all of which were significant predictors, and the strongest predictor was restraint from action ($\beta = .416$). **Conclusions:** Caring for a patient with a chronic diagnosis is often a powerful experience for caregivers. The additional tasks taken on with this role, the changes in the previously known rhythm of personal life, and the intensity of the felt stress left important traces in the mental and physical state of the caregivers. The way they perceive stress and the coping mechanisms they use can positively influence their QoL, adjusting their intensity of the new role. **Keywords:** COPING MECHANISMS, QUALITY OF LIFE, CAREGIVERS, CHRONIC DISEASES.

Perceived stress and coping mechanisms as determining factors of the quality of life for caregivers of patients with chronic diseases in Romania

INTRODUCTION

Caring for a patient with a chronic disease can be an overwhelming experience for caregivers, involving personal reframing in the context of patient care. Chronic diseases are characterized by a long-term evolution with persistent or recurrent symptoms and require complex management in order to maintain health and improve the patients' QoL. In the category of chronic diseases there is a wide range of ailments (e.g., neurological, oncological, cardiac, and mental) for which a personalized and integrated approach is necessary. Chronic disabling diseases are one of the world's leading causes of disability, affecting millions of people (1). These diagnoses cause an important limitation of both movement and general functioning of the patients (2). Studies have identified a significant association between patients with chronic diseases and the decrease in the QoL of their caregivers. Factors such as the nature and severity of the diagnosis, as well as the treatments and recuperative therapies followed by the degree of disability developed, considerably affect the QoL. In the case of diseases that require aggressive treatments (e.g., oncological diseases), the physical and mental functionality of the patients is significantly influenced (2). For patients with neurological conditions such as cerebral palsy (CP), stroke, Parkinson's disease, Alzheimer's, dementia, multiple sclerosis, etc., the limitation of cognitive status and the degradation of motor function lead to important challenges in daily activities, limiting independence, and the activities are often impossible to carry out without the help of another person.

Quality of life (QoL) is a "subjective assessment of individual well-being, which may include aspects such as physical and mental health, family and social satisfac-

tion, personal achievements and the subjective level of happiness and satisfaction" (3). QoL is a multidimensional construct that reflects the level of physical, psychological, and social functioning of the person. QoL is influenced by factors such as health status, and social or economic conditions (4). Each person perceives and evaluates the QoL through their own standards and criteria, and these vary due to various factors, such as age, health status, or culture. The aspects that build the QoL are either objective (e.g., living standards, health status) or subjective (e.g., the individual's perception of his own life) (5). QoL is a broad concept, resulting from the interaction between the subjective and objective perspectives and influencing the individual's perception of his own life (6).

The caregivers the person who provides support and assistance to a family member or a person diagnosed with an illness, being responsible for the patient's care and well-being, regardless of the type of illness or its severity. Being the main caregiver of a sick person can be compared to having a full-time job (7). Caregivers provide physical care, social support, and emotional support, coordinate medical care, and administer the financial and administrative aspects associated with the diagnosis (8, 9, 10).

Caregivers contribute to the sustainability of health systems by delaying or preventing institutionalized care (11). Carers' responsibilities subsequent to the patient's care can often lead to personal sacrifices, significantly limiting their QoL on multiple levels, including their professional life, interpersonal relationships, or emotional state (12, 13). The long-term impact of patient care is felt by primary caregivers both physically and emotionally. Due to the demanding and difficult role they undertake, which requires important personal

sacrifices, they present a high degree of risk for mental health problems, making them more susceptible to developing depression or anxiety (14, 15). Taking on the multifaceted care of a patient with a chronic illness exposes them to elevated levels of stress, anxiety, and physical exhaustion (13, 16). The uncertainty about the diagnosis's prognosis and the constant, sustained effort to meet the patient's complex needs further intensify this state (17).

The degree to which caregivers believe that their own or external resources are insufficient to meet demands, real or imagined, determines the level of stress experienced by them. The specialized literature has shown that the caregivers of patients with chronic diseases face high levels of perceived stress. Increased levels of stress can lead to the emergence of dysfunctional emotional reactions, which can be exacerbated by feelings such as powerlessness or lack of control over the situation in which they find themselves (18). The stress that caregivers experience as a result of their ongoing effort to provide for the patient's requirements is frequently frustrating and overwhelming, to the point of physical and mental exhaustion (19, 20).

Thus, physical as well as emotional exhaustion can be the direct consequence of the high levels of persistent stress associated with caring for patients with chronic diseases, affecting the ability of caregivers to carry out the necessary daily responsibilities.

Regarding coping mechanisms, research has highlighted the strategies used by caregivers of patients with chronic diseases to cope with the stress associated with diagnoses. The normal or pathological reaction to stress depends on the coping capacities of each individual and the way in which they adapt to the stressful context (21).

Personal experiences, the individual's

social or cultural context, and the resources available all influence the development of coping mechanisms as a personal response to stressful or challenging situations.

Coping mechanisms represent an important base of tools for the caregivers of patients with chronic diseases, with a significant impact on their QoL (22). Thus, the present study aims to analyze the QoL of the carers of patients with chronic diseases, through the lens of coping mechanisms and the stress perceived by them.

MATERIALS AND METHODS

Participants and procedure

The study participants were people who were patients with chronic diseases (e.g., Alzheimer's, cancer, stroke, dementia, multiple sclerosis, etc.).

The data collection procedure was carried out using the Google Forms research platform. After uploading the questionnaire, the link generated by the platform was shared among the caregivers of chronic disease patients. The participants were informed in advance about the conditions of participation (voluntary participation; withdrawal from the study at any time without any consequences; anonymity and confidentiality of answers) and the general objective of the study.

Instruments

Socio-demographic data

A series of questions were related to demographic data, such as gender, age, background, educational level, civil status, degree of kinship with the patient, time since finding out the diagnosis, and the patient's diagnosis.

Psychological data

- **Coping strategies.** To measure this variable, we used the COPE Questionnaire (Carver *et al.*, 1989) which consists of 53 items, rated on a 4-point Likert scale, from 1

Perceived stress and coping mechanisms as determining factors of the quality of life for caregivers of patients with chronic diseases in Romania

(I usually don't do this) to 4 (I often do this). Additionally, the questionnaire consists of 14 dimensions representing all coping styles: active coping ("I engage in additional activities that can contribute to solving the problem."), planning ("I try to formulate a strategy about what I have to do."), elimination of recurring activities ("I put aside other activities to focus on the problem."), withholding from action ("I force myself to wait for the right moment to react."), seeking social-instrumental support ("I ask people who have been through similar situations what they did in that situation."), seeking social-emotional support ("I tell someone how I feel."), positive reinterpretation ("I look for something good in what happens to me."), acceptance ("I'm learning to live with my problem."), denial ("I refuse to believe what happened."), emotional discharge ("I'm in a bad mood and I'm externalizing my emotions."), religious orientation ("I'm looking for God's help."), mental passivity ("I engage in work or other activities to take my mind off the problem."), behavioral passivity ("I give up trying to get what I want."), resorting to alcohol-medication ("I drink alcohol or take medication to think less about the problem."). The Alpha Cronach coefficients of each dimension were in the range of .600 - .900, which indicates a satisfactory level of internal consistency of the items. The score was made on each dimension, and a high score indicates a high level of the respective coping style.

- **Perceived stress.** To measure this variable, we used the Perceived Stress Questionnaire (Levenstein *et al.*, 1993). The instrument consists of 30 items ("I feel rested"; "I feel that I cannot manage to achieve my personal goals"; "I do many things because I have to do them and not because I like them.") rated on a 4-point

Likert scale from 1 (almost never) to 4 (almost always). Cronbach's Alpha coefficient was .856, which means that there was a good level of internal consistency. The total score was made summative, and a high score indicates a high level of perceived stress.

- **Quality of life.** To measure the variable "quality of life", we used the **WHOQOL** questionnaire developed by the World Health Organization (1996). The instrument consists of 26 items covering several aspects related to life in general, such as: subjective well-being, sleep, workplace, personal home, public health services, financial situation, etc. In the present study, only 8 items were used: ("How would you rate your quality of life?"; "Have you got enough money to meet your needs?"; "Have you got enough money to meet the patient's needs?"; "How satisfied are you with the support you get from your friends?"; "How satisfied are you with the conditions of your living place?"; "How satisfied are you with your access to health services?"; "How satisfied are you with your transport?"; "In the last 2 weeks, how often have you had negative feelings such as dark mood, despair, anxiety, depression?"). Items were rated on a 5-point Likert scale from 1 (not at all) to 5 (very much). Cronbach's Alpha coefficient was .767, which indicates a satisfactory level of item consistency. The total score was made summative, and a high score indicates a high level of QoL.

Statistical analysis

The statistical analyses were performed using IBM Statistical Package for Social Sciences (SPSS) for Windows, version 24 (SPSS Inc., Chicago, IL, USA). Results for descriptive statistics were expressed as means and standard deviations (SD).

To test the hypotheses of the study, de-

scriptive statistics including average, standard deviation, minimum score, maximum score, and indices of normality of distribution Skewness and Kurtosis were performed. Given that the Skewness and Kurtosis indices ranged between -1 and +1 for Skewness and -3 and +3 for Kurtosis, we can conclude that the data distribution is normal.

Ethical approval

The study was conducted in accordance with the Declaration of Helsinki, and the protocol was approved by the Ethical Committee of Faculty of Psychology and Educational Sciences, “Alexandru Ioan Cuza” University Iasi, Romania No. 511/2024.

RESULTS

Socio-demographic data

In total, there were 69 participants aged

between 25 and over 65, the majority being female participants (10 participants were male and 59 participants were female).

Most participants reported being married (N = 60), from an urban environment (N = 51), and of Orthodox religion (N = 65).

Regarding the degree of relationship to the patient, 35 participants reported being the patient’s spouse, 22 participants reported being the patient’s mother or father, 11 participants reported being the patient’s child, and only one participant reported being the patient’s cousin.

Psychological data

The results of the psychological instruments used for the present research (experienced stress, quality of life and, coping mechanisms) among caregivers of chronic disease patients are presented in first table.

TABLE I.
Descriptive statistics (N = 69)

	M	SD	Min	Max	Skewness	Kurtosis
Perceived stress	79.53	11.63	59	100	-.06	-1.26
Active coping	13.79	1.95	8	16	-.68	-.06
Planning	13.98	1.95	8	16	-.85	.17
Elimination of competing activities	12.82	1.96	7	16	-.54	.16
Restraint from action	11.60	1.94	6	16	-.22	.10
Search for social-instrumental support	12.11	2.63	4	16	-.11	1.63
Seeking social-emotional support	8.78	3.06	4	16	.50	-.47
Positive reinterpretation	11.04	3.03	5	16	.05	-1.05
Acceptance	11.31	3.21	4	16	-.27	-.64
Denial	10.01	3.90	4	16	-.08	-1.31
Emotional discharge	10.10	2.66	4	16	-.20	-.06
Orientation towards religion	11.66	3.48	4	16	-.55	-.50
Mental passivity	8.97	2.28	4	16	.41	.50
Behavioral passivity	7.95	2.89	4	15	.40	-.66
Resorting to alcohol-drugs	1.44	.88	1	4	.87	.31
Life quality	23.27	3.91	14	29	-.49	-.53

**Perceived stress and coping mechanisms as determining factors of the quality of life
for caregivers of patients with chronic diseases in Romania**

Hypotheses

H1. There was a significant and negative correlation between perceived stress and QoL.

H2. There was a significant correlation between coping styles and QoL.

H2.1. There was a significant and positive correlation between active coping and QoL.

H2.2. There was a significant and positive correlation between planning and QoL.

H2.3. There was a significant and negative correlation between elimination of recurrent activities and QoL.

H2.4. There was a significant and negative correlation between restraint and QoL.

H2.5. There was a significant and positive correlation between seeking social-instrumental support and QoL.

H2.6. There was a significant and positive correlation between seeking social-emotional support and QoL.

H2.7. There was a significant and positive correlation between positive reinterpretation and QoL.

H2.8. There was a significant and positive correlation between acceptance and QoL.

H2.9. There was a significant and negative correlation between denial and QoL.

H2.10. There was a significant and positive correlation between emotional discharge and QoL.

H2.11. There was a significant and positive correlation between religious orientation and QoL.

H2.12. There was a significant and negative correlation between mental passivity and QoL.

H2.13. There was a significant and negative correlation between behavioral passivity and QoL.

H2.14. There was a significant and negative correlation between alcohol-

medication use and QoL.

H3. There were significant differences in QoL between spouse, child, and mother or father who were caregivers for the patient with a chronic illness.

H4. There were significant differences in QoL since the diagnosis was made (less than 6 months, 6 months to 1 year, 1 year to 3 years, and more than 3 years).

H5. There were significant differences in QoL depending on how caregivers relate to the patient's diagnosis (worried, pessimistic, hopeless, confident, and resigned).

H6. Perceived stress and coping styles significantly predicted QoL.

Hypothesis testing

H1. There was a significant and negative correlation between perceived stress and QoL.

The results obtained indicated that there was no significant correlation between perceived stress and QoL ($r = .011$, $p = .929 > .05$).

H2. There was a significant correlation between coping styles and QoL.

To test hypothesis 2, we used the Pearson correlation.

H2.1. There was a significant and positive correlation between active coping and QoL. The obtained results indicated that there was no significant correlation between active coping and QoL ($r = .214$, $p = .078 > .05$).

H2.2. There was a significant and positive correlation between planning and QoL. Results obtained indicated that there was a significant and positive correlation between planning and QoL ($r = .376$, $p = .001 < .01$), in the sense that high scores on planning were associated with high scores on QoL.

H2.3. There was a significant and negative correlation between eliminating competing activities and QoL. The results generated by the data analysis indicated that there was no significant correlation between the elimination of competing activities and QoL ($r = .012, p = .922 > .05$).

H2.4. There was a significant and negative correlation between restraint and QoL. Statistical analysis of the data indicated that there was a significant and negative correlation between restraint and QoL ($r = -.304, p = .011 < .05$), meaning that high restraint scores were associated with low QoL scores.

H2.5. There was a significant and positive correlation between seeking social-instrumental support and QoL. The obtained results showed that there was no significant correlation between the search for social-instrumental support and the QoL ($r = .145, p = .235 > .05$).

H2.6. There was a significant and positive correlation between seeking social-emotional support and QoL. The obtained data demonstrated that there was no significant correlation between the search for social-emotional support and the QoL ($r = -.031, p = .802 > .05$).

H2.7. There was a significant and positive correlation between positive reinterpretation and QoL. Research results indicated that there was no significant correlation between positive reinterpretation and QoL ($r = -.025, p = .841 > .05$).

H2.8. There was a significant and positive correlation between acceptance and QoL. Results obtained showed that there was a significant and positive correlation between acceptance and QoL ($r = .280, p = .020 < .05$), in the sense that high scores on acceptance were associated with high scores on QoL.

H2.9. There was a significant and nega-

tive correlation between denial and QoL. Data analysis proved that there was no significant correlation between denial and QoL ($r = -.073, p = .549 > .05$).

H2.10. There was a significant and positive correlation between emotional discharge and QoL. The obtained results showed that there was a significant and positive correlation between emotional discharge and QoL ($r = .246, p = .042 < .05$), in the sense that high scores on emotional discharge were associated with high scores on QoL.

H2.11. There was a significant and positive correlation between religious orientation and QoL. The obtained results demonstrated that there was no significant correlation between religious orientation and QoL ($r = -.073, p = .550 > .05$).

H2.12. There was a significant and negative correlation between mental passivity and QoL. The obtained results indicated that there was no significant correlation between mental passivity and QoL ($r = -.025, p = .839 > .05$).

H2.13. There was a significant and negative correlation between behavioral passivity and QoL. We identified that there was a significant and negative correlation between behavioral passivity and QoL ($r = -.343, p = .000 < .01$), in the sense that high scores on behavioral passivity were associated with low scores on QoL.

H2.14. There was a significant and negative correlation between alcohol-medication use and QoL. The analysis of the obtained data proved that there was a significant and negative correlation between the recourse to alcohol-medicines and the QoL ($r = -.330, p = .006 < .01$), in the sense that high scores on the recourse to alcohol-medicines were associated with low QoL scores. The results obtained are presented in second table.

**Perceived stress and coping mechanisms as determining factors of the quality of life
for caregivers of patients with chronic diseases in Romania**

**TABLE II.
Correlations between coping styles and QoL**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1.Active coping	-														
2.Planning	.287*	-													
3.Elimination of competing activities	.150	.640**	-												
4.Restraint from action	.299*	.421**	.264*	-											
5. The search for social-instrumental support	.040	.311**	.393**	.432**	-										
6.Seeking social-emotional support	.084	.251*	.192	.260*	.109	-									
7.Positive reinterpretation	-.168	-.106	-.082	-.226	-.044	.464**	-								
8. Acceptance	-.525**	.019	.062	-.194	.371**	-.030	.395**	-							
9. Denial	-.401**	.064	.012	-.238*	.243*	-.159	.255	.702**	-						
10.Emotional discharge	.509**	.182	.199	.434**	.103	.360**	-.055	-.537**	-.707**	-					
11.Orientation towards religion	.173	.106	-.070	.057	.033	.267*	.458**	.045	.005	.191	-				
12.Mental passivity	-.226	-.164	-.161	.028	.091	.118	.245*	.391**	.391**	-.352**	.276*	-			
13.Behavioral passivity	.355**	.174	.125	.202	.298*	-.021	.115	-.036	-.033	.267*	.180	-.144	-		
14. Recourse to alcohol-medicines	.390**	-.176	-.253*	.063	.052	.128	.027	-.169	-.109	.277*	.071	-.104	.414**	-	
15. QoL	.214	.376**	.012	-.304*	.145	-.031	-.025	.280*	-.073	.246*	-.073	-.025	-.343**	-.330**	-

Note **p< .01; *p< .05

H3. There were significant differences in QoL between the spouse, child and mother or father who were caregivers for the patient with a chronic illness.

To test hypothesis 3, we used One-Way ANOVA. The results indicated that there were significant differences between caregivers who were the spouse (M = 24.74,

SD = 3.12) and caregivers who were the child (M = 21.36, SD = 4.29) of the patient with a chronic illness (F(2,68) = 5.807, p = .005 < .05, Mdif = 3.37, p = .029 < .05), in terms of QoL, meaning that spouses had higher QoL scores compared to caregivers who were the child of the patient with a chronic disease.

Additionally, there were significant differences between the caregivers who were the husband or wife (M = 24.74, SD = 3.12), and the caregivers who were the mother or father (M = 21.95, SD = 4.07) of the patient with a chronic illness

($F(2,68) = 5,807, p = .005 < .05, M_{dif} = 2,78, p = .018 < .05$), in terms of QoL, in the sense that spouses had higher QoL scores, compared to caregivers who were the mother or father of the patient with a chronic disease.

TABLE III.
Differences between spouses, children and mothers or fathers in terms of QoL

Relationship type		Mdif	SD	p
Husband / wife	Child	3.37	1.26	.029
	Mother/father	2.78	.98	.018
Child	Husband/wife	-3.37	1.26	.029
	Mother/father	-.59	1.34	1.000
Mother / father	Husband/wife	-2.78	.98	.018
	Child	.59	1.34	1.000

The obtained results indicated that there were no significant differences between the caregivers who were the mother or father (M = 21.95, SD = 4.07) and the caregivers

who were the child (M = 21.36, SD = 4.29) of the patient with a chronic disease ($F(2,68) = 5.807, p = .005 < .05, M_{dif} = -.592, p = 1.000 > .05$).

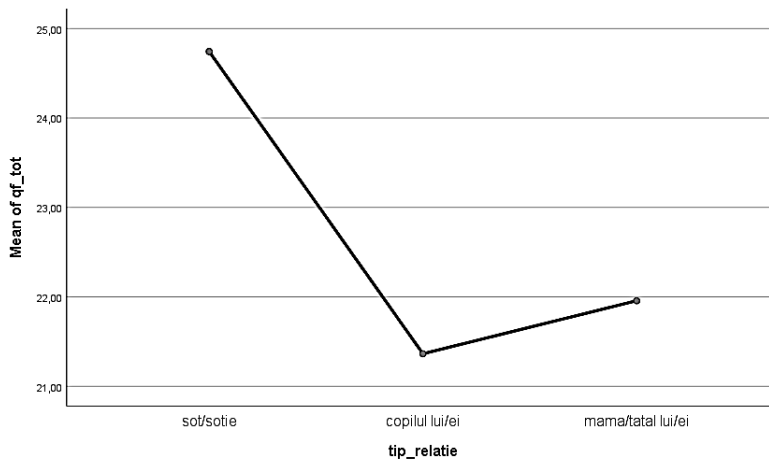


Fig. 1. Relationship type

H4. There had been significant differences in QoL since the time of learning the diagnosis (less than 6 months, 6 months to 1 year, 1 to 3 years, and more than 3 years).

The obtained results indicated that there were no significant differences in the QoL of caregivers of patients with chronic diseases, depending on the time since learning the diagnosis ($F(3, 68) = 2.77, p = .049$).

Perceived stress and coping mechanisms as determining factors of the quality of life for caregivers of patients with chronic diseases in Romania

TABLE IV.

Differences in the level of QoL according to the time since finding out the diagnosis

Diagnosis time		Mdif	SD	P
less than 6 months	6 months - 1 year	1.71	1.55	1.000
	1-3 years	3.25	1.35	.113
	more than 3 years	2.68	1.08	.094
6 months - 1 year	less than 6 months	-1.71	1.55	1.000
	1-3 years	1.54	1.71	1.000
	more than 3 years	.967	1.51	1.000
1 - 3 years	less than 6 months	-3.25	1.35	.113
	6 months - 1 year	-1.54	1.71	1.000
	more than 3 years	-.574	1.30	1.000
more than 3 years	less than 6 months	-2.68	1.08	.094
	6 months - 1 year	-.96	1.51	1.000
	1-3 years	.57	1.30	1.000

H5. There were significant differences in QoL depending on how caregivers related to the patient's diagnosis (worried, pessimistic, hopeless, confident, and resigned).

The obtained results indicated that there were significant differences between the

caregivers who were worried (M = 24.08, SD = 3.06) and the caregivers who were hopeless (M = 18.14, SD = 2.19) in terms of QoL (F(4, 68) = 4.24, p = .004 < .05, Mdif = 5.94, p = .003 < .05), meaning that caregivers who were worried had higher QoL scores compared to caregivers who were hopeless.

TABLE V.

Differences in the level of QoL depending on how caregivers relate to the diagnosis of the patient with a chronic disease

Relating to diagnosis		Mdif	SD	p
Concern	Pessimism	-.66	1.47	1.000
	Hopeless	5.94*	1.54	.003
	Confident	.71	1.11	1.000
	Resignation	.50	1.27	1.000
Pessimism	Concern	.66	1.47	1.000
	Hopeless	6.60*	1.85	.007
	Confident	1.38	1.51	1.000
	Resignation	1.16	1.63	1.000
Hopeless	Concern	-5.94*	1.54	.003
	Pessimism	-6.60*	1.85	.007
	Hopeless	-5.22*	1.58	.016
	Resignation	-5.44*	1.70	.022
Confident	Concern	-.71	1.11	1.000
	Pessimism	-1.38	1.51	1.000
	Hopeless	5.22*	1.58	.016
	Resignation	-.21	1.32	1.000
Resignation	Concern	-.50	1.27	1.000
	Pessimism	-1.16	1.63	1.000
	Hopeless	5.44*	1.70	.022
	Confident	.21	1.32	1.000

Significant differences were found between caregivers who were pessimistic about the patient’s diagnosis (M = 24.75, SD = 3.37) and caregivers who were hopeless (M = 18.14, SD = 2.19) regarding QoL (F(4, 68) = 4.24, p = .004 < .05, Mdif = 6.60, p = .007 < .05), meaning that caregivers who were pessimistic about the patient’s diagnosis had higher QoL scores compared to caregivers who were hopeless.

The results obtained indicated that there were significant differences between caregivers who were hopeless (M = 18.14, SD = 2.19) and caregivers who were confident (M = 23.36, SD = 3.80) in terms of QoL (F(4, 68) = 4.24, p = .004 < .05, Mdif = -5.22, p = .016 < .05), meaning that caregivers who were confident had higher QoL scores compared to caregivers who were hopeless.

Statistical analysis of the data indicates significant differences between caregivers who were resigned to the diagnosis of the patient with a chronic disease (M = 23.58, SD = 3.89) and caregivers who were hopeless (M = 18.14, SD = 2.19) in terms of QoL (F(4, 68) = 4.24, p = .004 < .05, Mdif

= 5.44, p = .022 < .05), meaning that caregivers who were resigned had higher QoL scores compared to caregivers who were without hope.

H6. Perceived stress and coping styles significantly predict QoL

The obtained results indicated that the predictive model made up of perceived stress and coping styles (coping, planning, elimination of recurring activities, restraint from action, search for social-instrumental support, search for social-emotional support, positive reinterpretation, acceptance, denial, emotional discharge, orientation towards religion, mental passivity, behavioral passivity, and recourse to alcohol-drugs) was a significant predictive model (F(15, 68) = 4.12, p = .000 < .05) that explains 53.8% of the variance of the dependent variable - the QoL of patients with a chronic disease. The predictors restraint from action (β = .416), denial (β = .397), mental passivity (β = .155), and recourse to alcohol-drugs (β = -.238) were significant predictors. The strongest predictor was restraint from action (β = .416).

TABLE VI.

The predictive model of the QoL for caregivers of patients with a chronic disease

	B	SE(B)	B
Perceived stress	-.04	.04	-.12
Active coping	.19	.31	.09
Planning	.46	.27	.23
Elimination of competing activities	-.50	.27	-.25
Restraint from action	.83	.29	.41*
Seeking instrumental social support	-.05	.22	-.03
Seeking social emotional support	.41	.20	.32
Positive reinterpretation	-.38	.23	-.29
Acceptance	.16	.22	.13
Denial	.39	.18	.39*
Emotional discharge	-.21	.18	-.14
Orientation towards religion	-.17	.14	-.15
Mental passivity	-.44	.21	-.26*
Behavioral passivity	.21	.18	.15
Resorting to alcohol-drugs	-1.29	.54	-.29*
R ²	.538**		

*p < .05; **p<.001

Perceived stress and coping mechanisms as determining factors of the quality of life for caregivers of patients with chronic diseases in Romania

DISCUSSION

The present study analyzed the relationship between perceived stress and coping strategies as determining factors of the QoL of caregivers of people with chronic diseases. The obtained results indicate a significant correlation between the stresses perceived by the patients' caregivers and their QoL in the sense that stress was able to negatively influence the QoL and was felt multidimensional. Perceived stress changed the level of personal functioning, both in terms of mental and physical health, in interpersonal relationships, in the financial or professional sphere, leading to a decrease in the QoL and the establishment of a general dysfunctional state.

Regarding the link between coping styles and QoL, the analysis of the 14 coping styles that follow the COPE scale reveals a significant and positive correlation between active coping and QoL, in the sense that active coping targeted concrete actions, with the aim of removing the stressor and its effects. As a conscious action, this coping style contributed to the QoL of caregivers of patients with chronic diseases, by constantly adjusting to stress factors (23, 24, 25). A significant and positive correlation also resulted from planning as a coping strategy and QoL. Thus, the active orientation towards identifying some modes of action was associated with a high degree of QoL of the carers.

Analyzing the data regarding the elimination of competing activities, the results showed that there was no significant correlation between this coping strategy and QoL. Therefore, the QoL was unaffected by avoiding distraction from stressful situations and focusing on solving the problem. A strong and unfavorable relationship was found between QoL and action restriction.

This was a kind of active coping in that it involved focusing on the stressor but also acting passively until conditions permitted it (26).

The results indicate that there was no significant correlation between instrumental social support seeking and QoL or social support seeking.

Thus, the tendency to request information from those around or advice to improve the degree of stress did not change the QoL of the caregivers, although existing studies analyzing this correlation resulted in an increased QoL as a result of social support (27). The results of our study showed that the need for moral support or understanding from the social or family environment to reduce stress did not influence the QoL. Regarding the tendency to look on the positive side even in an undesirable situation as a form of stressor perception, there was no significant correlation between positive reinterpretation and QoL, while there was a significant and positive correlation between acceptance and QoL. Thus, an approach based on accepting reality and being aware of the present period increases the QoL (28, 29). At the same time, the results showed that there was no significant correlation between denial and QoL. As a coping mechanism, denial refers to positioning in the refusal to acknowledge that the new reality means changing the course of life as it was before the installation of the stress factor. The obtained results indicated that there was a significant and positive correlation between emotional discharge and QoL. Thus, expressing emotions reduces the level of distress, which contributes to the QoL (24). In the coping strategy regarding religious orientation as a form of situational reinterpretation, there was no significant correla-

tion between religious orientation and QoL. Although our result is in contrast with the existing studies, a possible explanation may reside in the lack of such research on the Romanian population, the existing studies being carried out on other populations (30, 31, 32). Similarly, analyzing the results regarding withdrawal in other activities, as a technique to avoid focusing on problems, there was no significant correlation between mental passivity and QoL (33). A significant and negative correlation resulted between behavioral passivity and QoL. Reducing effort or giving up action in favor of achieving the goal was associated with low QoL scores. A significant and negative correlation was identified between alcohol-medication use and QoL. Thus, the use of alcohol-medicines by patients' caregivers to alleviate negative states was associated with low QoL scores (34, 35, 36). It was also identified that planning as a coping strategy as well as emotional discharge correlates significantly and positively with a high QoL, while restraint from action correlates significantly negatively with QoL.

Marital or family status was also important. Regarding the QoL between the spouse, child, and mother or father caregivers of the patient with a chronic disease, the results indicate that there were significant differences between the spouse caregivers and caregivers who were the child of the chronic disease patient regarding life quality. Thus, the caregivers who were the husband or the wife had higher scores on the QoL compared to the caregivers who held another degree of kinship. A possible explanation is the emotional connection and the commitment of marital status, which can lead to a greater understanding and empathy between the partners of the

couple. Studies on couple relationships showed a high adaptability to life's changes and challenges compared to people with other degrees of kinship (37, 38, 39). Additionally, the family caregivers who were the husband or wife had higher QoL scores compared to the family caregivers who were the mother or father of the patient with a chronic disease, but there were no significant differences between the family caregivers who were the mother or father and the family caregivers who were the child of the patient with a chronic disease (40). Thus, for the children who assumed the role of the main relative of the patient with a chronic disease, the QoL had a low level compared to the people who were the husband or wife of the patient. Young people who found themselves in this role presented a lower level of life compared to older caregivers (41, 42). At the same time, parents who were the main caregivers had a lower standard of living compared to the patient's husband or wife (43).

Regarding the QoL of caregivers of patients with chronic diseases depending on the time since learning the diagnosis, there were no significant differences. A possible explanation could be the adjustment of the caregivers to the new role and subsequent responsibilities and the development of resilience. By adjusting the strategies for managing the situation over time, once the shock associated with the diagnosis subsides, the family caregivers developed the inner resources and new mechanisms that support them in a good management of the situation, which can positively influence the QoL.

The results from the differences in dealing with the situation - how the caregivers deal with the patient's diagnosis (worried, pessimistic, hopeless, confident and re-

Perceived stress and coping mechanisms as determining factors of the quality of life for caregivers of patients with chronic diseases in Romania

signed) showed that there were significant differences between anxious and hopeless caregivers in terms of QoL, in that anxious caregivers score higher on QoL compared to hopeless caregivers. A possible explanation could be that caregivers who were concerned proactively seek coping mechanisms, whereas those who were hopeless regress to a state of withholding action.

Likewise, caregivers who were pessimistic about the patient's diagnosis had higher QoL scores compared to caregivers who were hopeless. Finally, the results showed that caregivers who were resigned to the patient's diagnosis of a chronic illness had higher QoL scores compared to caregivers who were hopeless. The obtained results are in congruence with those identified in the specialized literature. Resignation is reflected in the change of one's own perspective and the assumption of adaptation to the new reality, while the lack of hope was felt as the despair and responsibility resulting from the new responsibilities, which significantly changed the level of the QoL of the caregivers (44). Research results on perceived stress and coping styles as predictors of QoL demonstrated that the predictive model composed of perceived stress and coping styles (coping, planning, elimination of recurring activities, restraint from action, seeking social-instrumental support, seeking social support -emotional, positive reinterpretation, acceptance, denial, emotional discharge, orientation towards religion, mental passivity, behavioral passivity, and recourse to alcohol-drugs) is a significant predictive model and explains 53.8% of the variance of the dependent variable - the QoL of caregivers patients with a chronic disease. Predictors such as withholding from action, denial, mental passivity and resorting to

alcohol-drugs were identified as significant predictors. The strongest predictor was restraint from action. Restraint from action as a coping mechanism is correlated with a low QoL as proactive coping strategies can minimize potential stressors in the future (45).

Strengths and limitations of the study. The importance of the present study lies in its uniqueness. No study has investigated the link between perceived stress and coping mechanisms as predictors of the QoL of caregivers of patients with chronic diseases in Romania. As limitations, we can mention a larger number of participants that could provide generalized results for the topic addressed.

CONCLUSIONS

The experience of caring for a patient with a chronic diagnosis is often a powerful one for caregivers. The additional tasks taken on with this role, the changes in the previously known rhythm of life, and the intensity of the stress felt leave important traces in the mental and physical state of the carers. Through active coping, concrete actions with a role in reducing the stressor and constant adjustment, a higher degree of the QoL of the caregivers can be felt. By knowing the coping mechanisms suitable for the life context and by identifying the appropriate ways for the individual to act, the caregivers can go through the stage of patient care more easily and with a more positive positioning.

In addition to planning as proactive action, emotional release plays another important role in QoL, while behavioral passivity such as refraining from action or resorting to alcohol-drugs decreases perceived satisfaction.

In comparison to the carers who are the

mother and father of the patient and their child, the experience of the husband or wife of the patient with a chronic disease may be assimilated with a lesser intensity due to the nature and complexity of the relationship, but as an individual perception, the experience is lived in a way unique.

Regarding the QoL of the caregivers of patients with chronic diseases, depending on the time since learning the diagnosis, no significant changes were reflected in the

QoL of the caregivers. As situational positioning and reporting, caregivers who were anxious, resigned, or pessimistic reported a more satisfying QoL, compared to hopeless caregivers.

CONFLICT OF INTEREST AND FUNDING

The authors declare no conflicts of interest. This research received no external funding.

REFERENCES

1. World Health Organization (WHO). *WHOQOL: Measuring Quality of Life*. <https://www.who.int/tools/whoqol>. Accessed April 2024.
2. Cummins R. Subjective Well-Being, Homeostatically Protected Mood and Depression: A Synthesis. *Journal of Happiness Studies* 2010; 11(1): 1-17 / doi: 10.1007/s10902-009-9167-0.
3. World Health Organization (WHO). (2014). "Noncommunicable diseases". <https://www.who.int/data/gho/data/themes/noncommunicable-diseases>. Accessed April 2024.
4. Perera S, Mody SH, Woodman RC, Studenski SA. Meaningful change and responsiveness in common physical performance measures in older adults. *Journal of the American Geriatrics Society* 2016; 54(5): 743-749 / doi: 10.1111/j.1532-5415.2006.00701.x.
5. Weis J, Tomaszewski KA, Hammerlid E, Arraras JI, Conroy T, Lanceley A, Bottomley A. International Psychometric Validation of an EORTC Quality of Life Module Measuring Cancer Related Fatigue (EORTC QLQ-FA12). *Journal of the National Cancer Institute* 2017; 109(5) / doi: 10.1093/jnci/djw273.
6. Diener E, Oishi S, Tay L. Advances in subjective well-being research. *Nature Human Behavior* 2018; 2(4): 253-260 / doi: 10.1038/s41562-018-0307-6.
7. Kokorelias KM, Lu FKT, Santos JR, Xu Y, Leung R, Cameron JI. "Caregiving is a full-time job" impacting stroke caregivers' health and well-being: A qualitative meta-synthesis. *Health & Social Care in the Community* 2019 / doi: 10.1111/hsc.12895.
8. Stenberg U, Ruland CM, Miaskowski C. Review of the literature on the effects of caring for a patient with cancer. *Psycho-Oncology* 2012; 28(4): 236-245 / doi: 10.1002/pon.1670.
9. Adashek JJ, Subbiah IM. Caring for the caregiver: A systematic review characterizing the experience of caregivers of older adults with advanced cancers. *ESMO Open* 2020; 5(1): / doi: 10.1136/esmoopen-2020-000862.
10. Anderson EW, White KM. "It Has Changed My Life": An Exploration of Caregiver Experiences in Serious Illness. *American Journal of Hospice and Palliative Medicine* 2018; 35(2): 266-274 / doi: 10.1177/1049909117701895.
11. Cecil R, Thompson K, Parahoo K, McCaughan E. Towards an understanding of the lives of families affected by stroke: A qualitative study of home carers. *Journal of Advanced Nursing* 2012 / doi: 10.1111/jan.12037.
12. Bakas T, Burgener SC. Predictors of emotional distress, general health, and caregiving outcomes in family caregivers of stroke survivors. *Topics in Stroke Rehabilitation* 2009; 16(4): 262-275 / doi: 10.1310/tsr1604-262.

**Perceived stress and coping mechanisms as determining factors of the quality of life
for caregivers of patients with chronic diseases in Romania**

13. Sambasivam R, Liu J, Vaingankar JA, Ong HL, Tan ME, Fauziana R, Picco L, Chong SA, Subramaniam M. The hidden patient: chronic physical morbidity, psychological distress, and quality of life in caregivers of older adults. *Psychogeriatrics* 2019; 19: 65-72 / doi: 10.1111/psyg.12365.
14. Higginson IJ, Gao W, Jackson D, Murray J, Harding R. Short-form Zarit Caregiver Burden Interviews were valid in advanced conditions. *Journal of Clinical Epidemiology* 2010; 63(5): 535- 542 / doi: 10.1016/j.jclinepi.2009.06.014.
15. Chakraborty R, Jana A, Vibhute VM. Caregiving: a risk factor of poor health and depression among informal caregivers in India- A comparative analysis. *BMC Public Health* 2023; 23: 42 / doi: 10.1186/s12889-022-14880-5.
16. Secinti E, Lewson AB, Wu W, Kent EE, Mosher CE. Health-Related Quality of Life: A Comparative Analysis of Caregivers of People with Dementia, Cancer, COPD / Emphysema, and Diabetes and Noncaregivers, 2015- 2018 BRFSS. *Annals of Behavioral Medicine* 2021; 55(11): 1130-1143 / doi: 10.1093 /abm/kaab007.
17. Haley WE, Allen JY, Grant JS, Clay OJ, Perkins M, Roth DL. Problems and benefits reported by stroke family caregivers: Results from a prospective epidemiological study. *Stroke* 2009; 40(6): 2129-2133 / doi: 10.1161/STROKEAHA.108.545269.
18. Lim GY, Tam WW, Lu Y, Ho CS, Zhang MW, Ho RC. Prevalence of Depression in the Community from 30 Countries between 1994 and 2014. *Scientific Reports* 2018; 8: 2861 / doi: 10.1038/s41598-018-21243-x.
19. Fowler K, Mayock P, Byrne E, Bennett K, Sexton E. “Coming home was a disaster, I didn’t know what was going to happen”: a qualitative study of survivors’ and family caregivers’ experiences of navigating care post-stroke. *Disability and Rehabilitation* 2024 / doi: 10.1080/09638288.2024.2303368.
20. Panzeri A, Rossi Ferrario S, Vidotto G, Panzeri A. Interventions for Psychological Health of Stroke Caregivers: A Systematic Review. *Frontiers in Psychology* 2019 / doi: 10.3389/ fpsyg.2019.02045.
21. Craovan DI, Sava FA. Translation, adaptation, and validation on Romanian population of COPE questionnaire for coping mechanisms analysis. West University of Timisoara 2013.
22. Dahlrup B, Ekström H, Nordell E, Elmståhl S. Coping as a caregiver: A question of strain and its consequences on life satisfaction and health-related quality of life. *Archives of Gerontology and Geriatrics* 2015; 61(2): 261-270 / doi: 10.1016/j.archger.2015.06.007.
23. Aren M, Rahim N, Kasuma J. Does coping strategies have a significant relationship with quality of life among caregivers of chronic illness patients? *Couns-Edu: International Journal of Counseling and Education* 2017; 2(3): 92-105 /doi: 10.23916/002017029430.
24. Fairfax A, Brehaut J, Colman I, Sikora L, Kazakova A, Chakraborty P, Potter BK. A systematic review of the association between coping strategies and quality of life among caregivers of children with chronic illness and/or disability. *BMC Pediatrics* 2019; 19: 215 / doi: 10.1186/s12887-019-1587-3.
25. Teixeira RJ, Applebaum AJ, Bhatia S, Brandão T. The impact of coping strategies of cancer caregivers on psycho physiological outcomes: an integrative review. *Psychology Research and Behavior Management* 2018; 11: 207- 215 / doi: 10.2147/PRBM.S164946.
26. Lyne J, Roger D. A psychometric re-assessment of the COPE Questionnaire. *Personality and Individual Differences* 2000; 29(2): 321-335 / doi: 10.1016/S0191-8869(99)00196-8.
27. Magliano L, Patalano M, Sagliocchi A, et al. Burden, professional support, and social network in families of children and young adults with muscular dystrophies. *Muscle & Nerve* 2015; 52(1): 13- 21 / doi: 10.1002/mus.24503.
28. Hawken T, Turner-Cobb J, Barnett J. Coping and adjustment in caregivers: A systematic review. *Health Psychology Open* 2018; 5(2): 2055102918810659 / doi:10.1177/2055102918810659.
29. LeSeure P, Chongkham-ang S. The Experience of Caregivers Living with Cancer Patients: A Systematic Review and Meta-Synthesis. *Journal of Personalized Medicine* 2015; 5(4): 406-439 / doi: 10.3390/ jpm5040406.

30. Pucciarelli G, Vellone E, Bolgeo T, Simeone S, Alvaro R, Lee CS, Lyons KS. Role of Spirituality on the Association Between Depression and Quality of Life in Stroke Survivor- Care Partner Dyads. *Circulation: Cardiovascular Quality and Outcomes* 2020; 13: e006129 / doi: 10.1161/CIRCOUTCOMES.119.006129.
31. Triana L, Sudjatmiko IG. The Role of Religious Coping in Caregiving Stress. *Religions* 2021; 12(6): 440 / doi: 10.3390/rel12060440.
32. Pearce MJ, Medoff D, Lawrence RE, Dixon L. Religious Coping Among Adults Caring for Family Caregivers with Serious Mental Illness. *Community Mental Health Journal* 2016; 52(2): 194- 202 / doi: 10.1007/s10597-015-9875-3.
33. Kazemi A, Azimian J, Mafi M, *et al.* Caregiver burden and coping strategies in caregivers of older patients with stroke. *BMC Psychology* 2021; 9: 51 / doi: 10.1186/ s40359-021-00556-z.
34. Corbin WR, Farmer NM, Nolen-Hoekesma S. Relations among stress, coping strategies, coping motives, alcohol consumption and related problems: A mediated moderation model. *Addictive Behaviors* 2013; 38(4): 1912-1919 / doi: 10.1016/j.addbeh.2012.12.005.
35. Yi M, Jiang D, Jia Y, *et al.* Impact of Care giving Burden on Quality of Life of Caregivers of COPD Patients: The Chain Mediating Role of Social Support and Negative Coping Styles. *International Journal of Chronic Obstructive Pulmonary Disease* 2021; 16: 2245- 2255 / doi: 10.2147/ COPD.S311772.
36. Rospenda KM, Minich LM, Milner LA, Richman JA. Caregiver Burden and Alcohol Use in a Community Sample. *Journal of Behavioral Medicine* 2010; 33(6): 511- 519 / doi: 10.1080/ 10550887.2010.489450.
37. Rusu PP, Nussbeck FW, Leuchtmann L, Bodenmann G. Stress, dyadic coping, and relationship satisfaction: A longitudinal study disentangling timely stable from yearly fluctuations. *PLoS ONE* 2020; 15(4): e0231133 / doi: 10.1371/journal.pone.0231133.
38. Randall AK, Bodenmann G. The role of stress on close relationships and marital satisfaction. *Clinical Psychology Review* 2009; 29(2): 105-115 / doi: 10.1016/j.cpr.2008.10.004.
39. Quah S. Caring for persons with schizophrenia at home: Examining the link between family caregivers' role distress and quality of life. *Sociology of Health & Illness* 2013; 36(4): 596-612 / doi: 10.1111/1467-9566.12091.
40. Wan-Fei K, Hassan STS, Sann LM, Ismail SIF, Raman RA, Ibrahim F. Depression, anxiety and quality of life in stroke survivors and their family caregivers: A pilot study using an actor/partner interdependence model. *Electronic physician* 2017; 9(8): 4924-4933 / doi: 10.19082/4924.
41. Rath Rashmipriya P, Senapati P, Sahoo B, *et al.* Quality of Life and Coping Strategies Among Caregivers of Patient with Cardiovascular Diseases. *Journal of Advanced Zoology* 2023; 44: 1463-1467 / doi:10.17762/jaz.v44iS-5.1287.
42. Faronbi JO, Faronbi GO, Ayamolowo SJ, Olaogun AA. Caring for the seniors with chronic illness: The lived experience of caregivers of older adults. *Archives of Gerontology and Geriatrics* 2019 / doi: 10.1016/j.archger.2019.01.013.
43. Lavelle TA, Wittenberg E, Lamarand K, Prosser LA. Variation in the spillover effects of illness on parents, spouses and children of the chronically ill. *Applied Health Economics and Health Policy* 2014; 12(2): 117-124 / doi: 10.1007/s40258-014-0079-8.
44. Tambunan EH, Simbolon I. Experiences of family caregivers caring for patients with Alzheimer's disease: A hermeneutic phenomenological study. *Journal of Caring Science* 2023; 12(3): 136-143 / doi: 10.34172/jcs.2023.33098.
45. Rodríguez-Pérez M, Abreu-Sánchez A, Rojas-Ocaña MJ, del-Pino-Casado R. Coping strategies and quality of life in caregivers of dependent elderly caregivers. *Health and Quality of Life Outcomes* 2017; 15(1): 71 / doi: 10.1186/s12955-017-0634.