



# The Relationship Between the Styles of Coping with Stress of Multiple Sclerosis Patients and the Perception of Social Support

Yılmaz Inanc<sup>1</sup>, Tugba Kaya<sup>2</sup>

<sup>1</sup>Kahramanmaraş Sutcu Imam University Faculty of Medicine, Department of Neurology, Kahramanmaraş, Turkey

<sup>2</sup>Clinical Psychologist, Kahramanmaraş, Turkey

## Abstract

**Objective:** This study examined the effect of perceived social support on the coping styles of patients with multiple sclerosis (pwMS) and their relationship with disability.

**Materials and Methods:** In total, 100 pwMS who applied to the Neurology Outpatient Clinic of Kahramanmaraş Sutcu Imam University Medical Faculty Hospital and 100 healthy controls were included in the study. Disease duration, MS type, and Expanded Disability Status Scale (EDSS) scores for pwMS were evaluated. The socio-demographic information form, multidimensional scale of perceived social support, scale for coping with stress, and Beck depression inventory were used.

**Results:** The family, friend, and special person subdimensions of the perceived social support mechanism among pwMS and the helpless, optimistic, submissive, and self-confident approaches from the stress-coping subdimensions were positively correlated. However, the social support-seeking factor subdimension was negatively correlated. In the analysis of the effect of the social support level and coping mechanisms on each other in pwMS, a positive and significant correlation was found between the family and special person subdimensions and the optimistic approach. Moreover, pwMS had a mean score of  $19.6 \pm 6.1$  in the family subdimension of the perceived social support scale,  $16.8 \pm 7.6$  in the friend subdimension, and  $19.5 \pm 6.1$  in the special person subdimension. The helpless, submissive approach, and social support-seeking scores were  $2.4 \pm 0.6$ ,  $2.4 \pm 0.6$ , and  $3.1 \pm 0.5$ , respectively. In the analysis of the average of the scores obtained from the depression inventory, pwMS had an average score of  $22 \pm 14$ , and the control group had an average score of  $14.1 \pm 10.8$ . The mean scores of the pwMS in the helpless approach ( $p < 0.05$ ), submissive approach ( $p < 0.05$ ), and depression ( $p < 0.05$ ) inventory were significantly higher than those in the control group ( $p > 0.05$ ). The mean scores of the helpless approach ( $p < 0.05$ ) and the submissive approach ( $p < 0.05$ ) of pwMS with an EDSS score of  $> 3$  were significantly higher than those of pwMS with an EDSS score of  $\leq 3$ .

**Conclusion:** Coping strategies change throughout the disease. Specifically, patients with moderate-to-severe disabilities will need help coping with their existing disorder. As disability increases, the social support provided by family, friends, or spouses becomes more important.

**Keywords:** Multiple sclerosis, perceived social support, coping with stress

## Introduction

Multiple sclerosis (MS) is an autoimmune inflammatory and neurodegenerative disease of the central nervous system. Young adults are usually affected, and 20-40 years is the most common age range. Most patients have a relapsing form characterized by relapsing-remitting MS; however, over time, the disease may progress in the clinical process and become a

secondary progressive MS. Approximately 15% of patients have progressive disease from the onset (1-3).

In addition to physical disability, cognitive and psychological findings can be seen in patients with MS (pwMS) in the initial or advanced disease stages. Psychiatric findings, which are comorbidly found in pwMS, significantly affect the quality of life of the patients. Thus, providing support to patients is important

**Address for Correspondence:** Yılmaz Inanc, Kahramanmaraş Sutcu Imam University Faculty of Medicine, Department of Neurology, Kahramanmaraş, Turkey

**E-mail:** drinanc@gmail.com **ORCID-ID:** orcid.org/0000-0002-0423-0941

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to prevent these problems or ensure that they experienced a milder disease form.

The social support that individuals receive from family members, relatives, or friends is an important factor in coping with difficult processes. Social support, as a result of stressful situations in which people feel inadequate or are exhausted, provides the satisfaction of needs such as being loved, respected, compassionate, and belonging, contributes to positive thinking, and affects mental and physical health positively (4,5). Since MS is a chronic neurological disease, the lack of support may affect the mental and physical conditions of pwMS and may exacerbate the clinical course of the disease (6,7). Studies examining the effect of social support on the mental health of pwMS have concluded that the presence of social support contributed significantly to the quality of life and, accordingly, to the mental health dimension (8).

Throughout their lives, individuals may encounter many life events that will disrupt their physiological and psychological balance. As a result of these life events, which are called stress factors, individuals take some functional and non-functional actions against these disturbing events. With these actions, they try to adapt to stress by regulating their mood in the face of the stressor, changing their behavior toward resolving the stress-inducing events, or regulating their thoughts about the source of stress (9). This adaptation process is called coping. Coping strategies can be divided into problem-focused coping, in which negative emotions are due to changes in person-environment events, and emotion-focused coping, which aims to change how the emerging event is evaluated (10). While the self-confident, optimistic, and social support-seeking approaches are seen as functional coping styles, submissiveness and helpless approach are considered dysfunctional coping styles (11).

This shows that continuous social support has an important role in the development of coping behaviors, perceived social support motivates the individual to evaluate him-/herself and his/her environment more positively and functionally, and individuals with high social support have more functional coping skills in stressful situations (12).

The state of being healthy in pwMS is evaluated as a whole, and it should be evaluated not only as the absence of disease symptoms but also the individual's social and mental well-being (13) When approached from this point of view, the effect of the social environment on patients' coping with stress should not be ignored. However, studies emphasizing the social factors that affect pwMS' levels of coping with stress appear limited. Therefore, in this study, we aimed to determine the relationship between the perceived social support mechanisms and coping styles of pwMS.

## Materials and Methods

The study was performed in the MS Outpatient Clinic of Kahramanmaraş Sutcu Imam University Medical Faculty Hospital. Ethical approval was obtained at decision number 01 (date: 20.09.2022) in Kahramanmaraş Sutcu Imam University Faculty of Medicine. The study consisted of 100 patients treated for MS in the neurology outpatient clinic and 100 matched healthy controls. For data collection, the information form created by the researchers, styles of coping with stress scale, multidimensional scale of perceived social support, and the Beck depression inventory were used. Data were collected through face-to-face interviews. In the information form, questions intended to determine the characteristics of the sample group, such as age, marital status, educational status, place of residence, employment status, disease duration, MS type, and Expanded Disability Status Scale (EDSS) scores of pwMS.

### Statistical Analysis

The IBM SPSS Statistics version 25 (IBM Corp., Armonk, NY, USA) was used for the statistical evaluation of data. Continuous data were summarized as mean and standard deviation, whereas categorical data were summarized as numbers and percentages.

**Stress-coping styles scale:** The scale was developed by Lazarus and Folkman (14), and it measures the actions and way of thinking of individuals following stressful events. The Turkish validity and reliability tests of the scale were conducted by Şahin and Durak in 1995 (14). The scale consists of 30 items, and each item is scored between 0 and 3. It consists of five subscales: self-confident, optimistic, helpless, submissive, and social support-seeking approaches. The self-confident, optimistic, and social support-seeking approaches are functional coping methods focused on problem solving, and the helpless and submissive approaches show dysfunctional coping ways that focus on emotions. The high scores obtained from the subscales, which do not have a total score, indicate that the individual prefers the coping method much more.

### Multidimensional scale of perceived social support:

The scale was developed by Zimet et al. (15). It measures the adequacy of social support provided by three social sources. The scale, which was adapted into Turkish by Eker et al. (16), consists of 12 items and has three subscales: family, friend, and special person. The lowest score that can be obtained from the family (items 1, 2, 7, and 10), friend (items 3, 4, 8, and 12), and special person (items 5, 6, 9, and 11) subscales is 4, and the lowest total score obtained by adding the scores from the subscales is 12; a high score indicates high perceived social support (16).

**Beck depression inventory:** This depression-rating scale consists of 21 questions in total, evaluated by adding the scores between 0 and 3 obtained from each answer. In line with the

corresponding score ranges, the scale was classified as normal when the score is within 1-10; moderate mood disorder, 11-16, clinical depression, 17-20; moderate depression, 21-30; severe depression, 31-40. A score between 41 and 63 is considered severe depression. The Turkish validity and reliability tests of the scale were conducted by Hisli (17,18).

## Results

Considering the demographic characteristics of pwMS, the mean age was  $34.9 \pm 9.9$ , and the majority of them were female (75%), high school (35%), and university graduate (35%). The mean disease duration was  $5.9 \pm 8.1$ . The mean EDSS score was  $1.8 \pm 1.6$ , and 97% of the patients had RRMS. Regarding the demographic characteristics of the control group, the mean age was  $28.1 \pm 8.2$ , the majority of them were women (55%), and they were university graduates (79%) (Table 1).

When the perceived social support, coping with stress, and Beck depression inventory scale scores of pwMS and the control group were examined, pwMS were found to have mean scores of  $19.6 \pm 6.1$ ,  $16.8 \pm 7.6$ , and  $19.5 \pm 6.1$  in the family, friend, and special person subdimensions of the perceived social support scale. The helpless, submissive, and social support-seeking approach scores were  $2.4 \pm 0.6$ ,  $2.4 \pm 0.6$ , and  $3.1 \pm 0.5$ , respectively. In the control group, the scale of perceived social support had mean scores of  $20 \pm 6.03$ ,  $18.4 \pm 6.5$ , and  $20.6 \pm 6.2$  in the family, friend, and special person subdimensions. The helpless, submissive, and social support-seeking approach scores were  $2.1 \pm 0.5$ ,  $2.2 \pm 0.5$ , and  $2.9 \pm 0.5$ , respectively. In the analysis of the average of the scores obtained from the depression inventory, pwMS had an average of  $22.1 \pm 14$ , and the control group had an average of  $14.1 \pm 10.8$ . The mean scores of pwMS in the helpless approach, submissive approach, and depression inventory

**Table 1. Demographic characteristics of the participants**

Variables		pwMS		Healthy	
		Mean $\pm$ SD		Mean $\pm$ SD	
Age		$34.9 \pm 9.9$		$28.1 \pm 8.2$	
		n	%	n	%
Sex	Male	25	25	45	45
	Female	75	75	55	55
Education	Primary	22	22	4	4
	Secondary	8	8	2	2
	High	35	35	15	15
	University	35	35	79	79
Marital status	Single	33	33	66	66
	Married	67	67	34	34
Living in	Village	7	7	13	13
	District	29	29	15	15
	City	64	64	72	72
Working status	Officer	9	9	9	9
	Worker	10	10	27	27
	House wife	47	47	2	2
	Unemployed	15	15	2	2
	Retired	3	3	0	0
	Freelancer	5	5	3	3
	Student	11	11	54	54
MS type	RRMS	97	97	-	-
	SPMS	2	2	-	-
	PPMS	1	1	-	-
Illness duration (year)		5.97	-	-	-
Medium EDSS		$1.8 \pm 1.6$	-	-	-
EDSS $\leq 3$		87	87	-	-
EDSS $\geq 3$		13	13	-	-

pwMS: People with multiple sclerosis, SD: Standard deviation, RRMS: Relapsing-remitting multiple sclerosis, PPMS: Primary progressive multiple sclerosis, EDSS: Expanded Disability Status Scale

( $p < 0.05$ ;  $p < 0.05$ ; and  $p < 0.05$ ) were significantly higher than that in the control group ( $p > 0.05$ ) (Table 2).

According to the EDSS scores, pwMS with an EDSS score of  $\leq 3$  had mean scores of  $19.5 \pm 6$ ,  $17.1 \pm 7.6$ , and  $19.4 \pm 6.2$  in the family, friend, and special person subdimensions of the perceived social support scale. The optimistic, helpless, submissive, and social support-seeking approach scores were  $2.8 \pm 0.6$ ,  $2.3 \pm 0.6$ ,  $2.4 \pm 0.6$ , and  $3 \pm 0.4$ , respectively. In pwMS with an EDSS score of  $> 3$ , the mean scores in the family, friend, and special person subdimensions of perceived social support scale were  $19.6 \pm 3.4$ ,  $15.5 \pm 7.9$ , and  $20.2 \pm 5.7$ , respectively. The optimistic, helpless, submissive, and social support-seeking approach scores were  $2.9 \pm 0.7$ ,  $2.9 \pm 0.7$ ,  $2.9 \pm 0.7$ , and  $2.9 \pm 0.5$ , respectively. The mean scores of the helpless approach ( $p < 0.05$ ) and the submissive approach ( $p < 0.05$ ) of pwMS with an EDSS score of  $> 3$  were significantly higher than those of pwMS with an EDSS score of  $< 3$  (Table 3).

The results revealed that the family, friend, and special person subdimensions of the perceived social support mechanism

in pwMS and the helpless, optimistic, submissive, and self-confident approaches from the stress-coping subdimensions were positively correlated. However, the social support-seeking subdimension was negatively correlated. In the analysis of the effect of the social support level and coping mechanisms on each other in pwMS, a positive and significant correlation was found between the family and special person subdimensions and the optimistic approach (family-optimistic approach,  $r = 0.261$ ,  $p = 0.009$ ; special human-optimistic approach,  $r = 0.300$ ,  $p = 0.003$ ) (Table 4).

### Discussion

MS is the most common chronic inflammatory disease of the central nervous system in young adults. Social support from family members, relatives, or friends is an important factor in the coping of pwMS with difficult processes due to disease-related disability and psychological and comorbid conditions. This study focuses on the social support perceptions and levels of "coping with stress" of pwMS, examines the relationship with the level of disability, and compares the scores obtained from the scales in the control group. According to the findings, a

**Table 2. Comparison of perceived social support, coping with stress, and depression scores between the MS group and the healthy control group**

	MS	Healthy	
	Mean $\pm$ SD	Mean $\pm$ SD	p-value
Perceived social support			
Family	19.6 $\pm$ 6.1	20.1 $\pm$ 6.03	0.594
Friend	16.8 $\pm$ 7.6	18.4 $\pm$ 6.5	0.11
Special person	19.5 $\pm$ 6.1	20.6 $\pm$ 6.2	0.21
Coping with stress			
Confident approach	3.0 $\pm$ 0.6	3.1 $\pm$ 0.6	0.1
Optimistic approach	2.8 $\pm$ 0.6	2.7 $\pm$ 0.7	0.1
Helpless approach	2.4 $\pm$ 0.6	2.1 $\pm$ 0.5	0.02
Submissive approach	2.4 $\pm$ 0.6	2.2 $\pm$ 0.5	0.02
Seeking social support	3.1 $\pm$ 0.5	2.9 $\pm$ 0.5	0.2
Depression	22.1 $\pm$ 14.1	14.1 $\pm$ 10.8	0.005

MS: Multiple sclerosis, SD: Standard deviation

**Table 3. Comparison of EDSS, perceived social support, and coping with stress subscale scores in the MS group**

	EDSS $\leq 3$	EDSS $> 3$	
	Mean $\pm$ SD	Mean $\pm$ SD	p-value
Perceived social support			
Family	19.5 $\pm$ 6.1	19.6 $\pm$ 5.4	0.4
Friend	17.1 $\pm$ 7.6	15.5 $\pm$ 7.9	0.1
Special person	19.4 $\pm$ 6.2	20.2 $\pm$ 5.7	0.2
Coping with stress			
Confident approach	3.1 $\pm$ 0.6	3.1 $\pm$ 0.6	0.1
Optimistic approach	2.8 $\pm$ 0.6	2.9 $\pm$ 0.7	0.1
Helpless approach	2.3 $\pm$ 0.6	2.9 $\pm$ 0.7	0.015
Submissive approach	2.4 $\pm$ 0.6	2.9 $\pm$ 0.7	0.023
Seeking social support	3.1 $\pm$ 0.4	2.9 $\pm$ 0.5	0.2

EDSS: Expanded Disability Status Scale, SD: Standard deviation

**Table 4. Comparison of perceived social support and coping with stress subscale scores in the MS group**

Perceived social support	Coping with stress mechanism					
	Helpless approach	Optimistic approach	Submissive approach	Seeking social support	Confident approach	
Family	r	0.102	0.261	0.054	-0.095	0.121
	p	0.316	0.009	0.593	0.352	0.233
Friend	r	0.213	0.122	0.187	-0.153	0.140
	p	0.34	0.229	0.064	0.132	0.166
Special person	r	0.072	0.300	0.030	-0.107	0.089
	p	0.482	0.003	0.768	0.292	0.380

MS: Multiple sclerosis, r: Pearson correlation coefficient

positive correlation was found between the helpless, optimistic, submissive, and self-confident approaches and the social support scale subdimensions of family, friends, and special people in pwMS, and a significant relationship was found.

In the study, the levels of using the self-confident, optimistic, and social support-seeking approaches, which are the subdimensions of the stress-coping attitudes scale, were higher than the levels of using the helpless and submissive approaches. Patients with an EDSS score  $>3$  used the submissive and helpless approach significantly more than patients with an EDSS score of  $\leq 3$ . When compared with the healthy control group, the depression level and submissive and helpless approaches, which are the subdimensions of the approach to emotion, were significantly higher in pwMS than in the control group.

Social support is the emotional and physical experiences of the individual that given by either the inner or outer circles (19). Social support is a kind of shock absorber against the physical and psychological problems of the individual and has important results for individuals at every stage of life (20,21).

In this study, pwMS had a high perception of social support in all three dimensions. The patients stated that they mostly received support from their families and special people. The level of social support in pwMS was high because the majority of the participants (67%) were married. A study conducted in 2017 revealed that marriage potentiates the perception of social support (22). In a study working on the relationship between psychological factors and chronic pain among handicapped people, the perception of social support resulted in lower pain levels and a better psychological mood (23).

The MS process usually causes disability and brings new problems and stress factors in view (24,25). A study stated that stressful life events and family problems were more common in pwMS than in the control group (26). In the present study, in accordance with the literature data, the depression level in pwMS was significantly higher than that in the control group.

In the study, the levels of using the self-confident, optimistic, and seeking social support approaches, which are the subdimensions of the stress-coping attitudes scale, were higher than the levels of using the helpless and submissive approaches. This result shows that pwMS prefer problem-oriented approaches more than emotion-oriented approaches based on their styles of coping with stress. The depression level and submissive and helpless approaches, which are the subdimensions of the approach to emotion, were significantly higher in pwMS than in the control group. In a meta-analysis study on the coping styles of pwMS, patients mostly preferred emotion-oriented and avoidance strategies and used problem-oriented active coping approaches at a lower rate than the general population (27). Similarly, in another study, pwMS has a higher risk of experiencing depression than the control

group (28). Thus, depression comes along with disability and ineffective coping methods (29,30).

Patients with an EDSS score of  $>3$  used the submissive and helpless approaches significantly more than patients with an EDSS score of  $<3$ . Considering that patients with an EDSS score of  $\geq 3$  need physical support and permanent disability progresses, the rate of using helpless and submissive approaches increases due to the increase in cognitive losses, dependence on the environment, and inability to meet their needs. PwMS experience exhaustion with an increasing disability; this symptom is accompanied by depression, and they have difficulty even doing house chores in daily life (31). The majority of the pwMS were women (75%) and married (67%; they also have responsibilities related to their children and housework, if any, apart from their own care), and patients are coping with problems in fulfilling these roles because of MS symptoms. It increases the orientation toward dysfunctional and emotion-focused strategies.

### Study Limitations

Social support mechanisms are a way of coping with adversity, are accepted as problem-focused coping strategies, and effectively reduce stress (32). In this study, the analysis of the effect of the social support level and coping mechanisms on each other in pwMS revealed a positive and significant correlation between the family and private person subdimension and the optimistic approach. Social support mechanisms can be offered directly or indirectly to an individual according to the support request, and individual needs must be provided to help them use coping strategies more effectively in difficult situations (33).

### Conclusion

Coping strategies change throughout the disease course. Patients with moderate-to-severe disabilities will need help in coping with their existing disorders. As the disability progresses, social support from family, friends, or spouse becomes more important. Neuropsychological aspects must be considered, particularly during disease onset and later stages of disability.

### Ethics

**Ethics Committee Approval:** Ethical approval was obtained at decision number 01 (date: 20.09.2022) in Kahramanmaraş Sutcu Imam University Faculty of Medicine.

**Informed Consent:** Informed consent was obtained from all participants.

**Peer-review:** Externally peer-reviewed.

### Authorship Contributions

Surgical and Medical Practices: Y.I., Concept: Y.I., Design: Y.I., T.K., Data Collection or Processing: Y.I., T.K., Analysis or Interpretation: Y.I., T.K., Literature Search: Y.I., T.K., Writing: Y.I., T.K.

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