

eTable 1 | Current Literature on Coping for NMOSD

Author, year, title	No. of participants / study design	Main Findings regarding Coping
Esiason DC, Ciesinski N, Nurse CN, Erler W, Hattrich T, Deshpande A, 2024, The psychological burden of NMOSD – a mixed method study of patients and caregivers.	31 NMOSD patients and 22 of their caregivers Mixed methods study	This study examined the psychological burden of NMOSD in patients and their caregivers Prevalence of Overcontrolled Coping Most patients (82.7%) and all caregivers reported an overcontrolled coping style, marked by emotional suppression, rigid patterns, and persistence with unhelpful strategies despite ongoing stress. Association with Psychological Burden Overcontrolled coping was positively correlated with anxiety for both patients and caregivers. Anxiety and rigid coping in one partner appeared to reinforce similar patterns in the other, rather than balancing them out. Internalising Feelings Male patients and caregivers often suppressed emotions to appear strong and avoid worrying others, using emotional restraint as a key coping strategy. Impact on Help-Seeking and Pain Treatment Overcontrolled coping and stoicism contributed to delayed help-seeking, insufficient pain management, and increased caregiver stress. Limited Benefit from Previous Therapy Many patients and caregivers had previous experience with talk therapy, but few found it helpful, suggesting a need for NMOSD-specific interventions targeting coping difficulties.
Liao H, Fan P, Ruan H, Qiu W, Zhang M, & Li H, 2024, Characteristics of recurrence risk perception and coping strategies in patients with neuromyelitis optica spectrum disorder: A qualitative study.	15 NMOSD patients Qualitative, descriptive phenomenological study	This study examined the characteristics of relapse risk perception and coping strategies in NMOSD patients Active Seeking of Information Support Patients wanted clearer information on relapse risk, prevention, and management, as well as more communication with healthcare providers and fellow patients. Proactive Relapse Prevention Patients aware of relapse risks, especially those with prior episodes, adopted helpful behaviours like medication adherence, physical activity, and avoiding triggers. Limitation of Coping Strategies Although patients valued relapse prevention, some had difficulties with self-management and relied on non-professional advice, resulting in inappropriate medication adjustments without medical supervision.
Barzegar M, Allahdadian S, Mirmosayyeb O, Azarbajejani R, 2022, Short report: assessment of coping strategies in patients with neuromyelitis optica spectrum disorder (NMOSD) and multiple sclerosis.	30 NMOSD patients, 76 Multiple sclerosis patients and 50 healthy subjects Cross-sectional questionnaire-study	Maladaptive Coping Patterns NMOSD patients, similar to those with MS, more frequently used maladaptive strategies such as behavioural and mental disengagement compared to healthy controls. Overall, NMOSD patients showed a tendency toward maladaptive coping, particularly through avoidance and withdrawal. Substance use was less common in both patient groups than in healthy individuals. Sociodemographic Differences Patients with lower educational levels in the NMOSD group showed greater use of emotion-focused strategies like venting. Cultural Influences Religious coping was common across all groups, likely reflecting cultural and religious norms. Lack of Clinical Correlations No significant associations were found between coping strategies and age, gender, disease duration, or disability level. Clinical Implications The study suggests that without targeted interventions, maladaptive coping patterns in NMOSD tend to persist, highlighting the need for a multidisciplinary approach including coping skills training.
Mutch K, Methley A, Hamid S, Moore P, Jacob A, 2017, If they are OK, we are OK: the experience of partners living with neuromyelitis optica.	65 partners (spouses) of NMOSD patients Mixed methods study	This study examined the lived experiences, well-being, and caregiver burden of partners (spouses) of NMOSD patients Role and Relationship Adaptation After diagnosis, partners took on wide-ranging caregiving duties—emotional, financial, physical, and social—often across traditional gender roles. This was especially demanding when children were involved. Still, most couples remained stable, managing the disease as a team. Shared Well-being Partners' emotional state was closely tied to the patient's condition. Concern for relapses often led them to neglect their own needs and reduce social activities.

		Adjustment Over Time As the patient’s condition stabilized, partners reported improved quality of life. Nonetheless, fears of relapse and symptom fluctuation persisted.
		Gender Differences in Coping Male partners were typically protective but emotionally reserved, while female partners supported autonomy yet sometimes restricted their own activities due to guilt or worry.
		Challenges with Healthcare Services Partners often felt overlooked by health professionals despite their involvement. They appreciated concrete support but found navigating the healthcare system frustrating due to limited NMOSD knowledge among healthcare providers.
		Constant Vigilance and Anxiety Fear of relapse made spontaneous activities difficult. Partners had to carefully plan ahead and often felt a continuous sense of being on alert.
		Identity as Caregivers Although involved in daily care, most partners did not see themselves as caregivers and did not report high emotional burden, likely viewing support as part of their relationship role.
Hollinger KR, Franke C, Arenivas A, 2016, Cognition, mood, and purpose in life in neuromyelitis optica spectrum disorder.	23 NMOSD patients and 20 control subjects (family/friends of NMOSD patients) Cross-sectional questionnaire-study	This study examined cognition, mood, and purpose in life (PIL) among NMOSD patients
		Purpose in Life (PIL) Scores Average PIL scores did not significantly differ between NMOSD patients and controls, but the relationship between PIL and cognitive function varied across groups.
		PIL and Cognition In NMOSD patients, higher PIL scores were linked to better cognitive performance, particularly on the Code Substitution test. In contrast, control participants with higher PIL performed worse on this task.
		PIL and Mood Within the NMOSD group, no direct correlation was found between PIL and depression. However, when data from both groups were combined, higher PIL was associated with lower depression scores.
		Interpretation These results suggest that a strong life purpose may act as a protective factor against cognitive decline in NMOSD, echoing findings from other neurological conditions like Alzheimer’s disease.
		Caregiver Influence The study also notes that caregiver burden among control participants—many of whom were close to NMOSD patients—may negatively affect their own PIL and cognitive outcomes.

Abbreviations: DC = Dyadic coping, MS = Multiple sclerosis, PIL = Purpose in Life.

eTable 2 | Definitions and Examples of Dyadic Coping Inventory Key Terms

Term	Definition	Examples from the questionnaire
Stress communication	Stress communication is defined as how partners express and share their stress with each other, including communicating needs and showing vulnerability. Unlike supportive DC, which involves providing direct support, stress communication focuses on sharing feelings without necessarily offering solutions.	“I let my partner know that I appreciate his/her practical support, advice, or help.” “I show my partner through my behaviour when I am not doing well or when I have problems.”
Supportive DC	Supportive DC is defined as one partner offering emotional or practical support to help the other manage stress, such as providing advice or expressing solidarity. Unlike delegated DC, where one partner takes over tasks, supportive coping involves offering help without fully taking responsibility for the tasks.	“I express to my partner that I am on his/her side.” “I try to analyse the situation together with my partner in an objective manner and help him/her to understand and change the problem.”
Negative DC	Negative DC can involve hostility, such as blaming or sarcasm, ambivalence with reluctant or unmotivated support, or superficial support, lacking empathy and genuine understanding.	“I blame my partner for not coping well enough with stress.” “I provide support but do it so unwillingly and unmotivated because I think that he/she should cope with his/her problems on his/her own.”
Delegated DC	In delegated DC, one partner takes over tasks completely to reduce the other’s stress. This form of coping involves a clear division of responsibilities, where one partner is specifically asked to help, and the task is entirely handled by them.	“I take on things that my partner would normally do in order to help him/her out.” “When my partner feels he/she has too much to do, I help him/her out.”
Common DC	Common DC refers to both partners participating equally in the coping process to address either problem-focused or emotion-focused issues in their relationship. While problem-focused common DC involves joint problem-solving, task sharing, and information gathering, emotion-focused coping includes mutual support, shared relaxation, and engaging in joint activities like religious practices or sporting activities.	“We engage in a serious discussion about the problem and think through what has to be done.” “We help each other relax with such things like massage, taking a bath together, or listening to music together.”
Total negative DC	Total negative DC is a composite score based on 8 items of the DCI, classified according to their functional valence as negative coping strategies.	
Total positive DC	Total positive DC is a composite score based on 19 items of the DCI classified according to their functional valence as positive coping strategies.	
Total DC	The Total DC score is the cumulative score for each individual's DC and their partner's DC. The calculation of the total DC score consists of adding the two intermediate totals and the 'Common DC' scale, resulting in a final score that ranges from 35 to 175.	
Cut-off values of DC	The following cut-off values apply to the total DC score: <111 (below average), 111–145 (normal) and >145 (above average). Higher scores indicate more frequent DC, without providing information about the specific strategies used or their effectiveness.	

Abbreviations: DC= Dyadic coping.
Bodenmann G. Dyadisches Coping Inventar - DCI. *Bern: Huber*; 2008
Bodenmann G. Dyadic coping: A systemic-transactional view of stress and coping among couples: Theory and empirical findings. *European Review of Applied Psychology*. 1997;47(2):137-140.

eTable 3 | Correlation analysis between dyadic coping, relationship quality, depression, and anxiety within the couple

	DC Pat	DC P	QMI Pat	QMI P	PHQ Pat	PHQ P	GAD Pat	GAD P	Reci S	Reci P	Cong Pat	Cong P	PerSi Pat	PerSi P
Female NMOSD patient and male partner (n = 46)														
DC Pat														
DC P	0.535**													
QMI Pat	0.706**	0.457**												
QMI P	0.590**	0.644**	0.619**											
PHQ Pat	-0.382**	-0.108	-0.409**	-0.361*										
PHQ P	-0.044	-0.342*	-0.234	-0.295*	-0.026									
GAD Pat	-0.500**	-0.365*	-0.541**	-0.347*	0.680**	0.106								
GAD P	-0.191	-0.482**	-0.261	-0.381**	-0.005	0.853**	0.164							
Reci S	0.082	-0.120	0.068	0.069	-0.005	-0.176	0.076	-0.236						
Reci P	-0.120	-0.190	0.063	-0.014	0.069	-0.263	0.162	-0.245	0.531**					
Cong Pat	0.023	-0.104	0.095	0.069	0.076	-0.181	0.213	-0.098	0.108	0.416**				
Cong P	-0.171	0	-0.070	-0.228	0.386**	-0.289	0.345*	-0.266	0.325*	0.412**	0.377**			
PerSi Pat	-0.301*	-0.049	-0.155	-0.158	0.223	-0.372*	0.267	-0.289	0.028	0.205	0.549**	0.501**		
PerSi P	0.061	-0.254	0.017	-0.144	0.068	0.045	0.171	0.200	0.033	0.146	0.449**	0.397**	0.232	
Female MOGAD patient and male partner (n = 29)														
DC Pat														
DC P	0.657**													
QMI Pat	0.478**	0.303												
QMI P	0.275	0.294	0.401*											
PHQ Pat	-0.078	-0.079	-0.151	-0.135										
PHQ P	0.001	-0.063	0.098	-0.151	0.313									
GAD Pat	-0.106*	-0.034	-0.157	0.009	0.880**	0.206								
GAD P	-0.113	-0.140	0.055	-0.130	0.362	0.807**	0.325							
Reci S	0.137	-0.206	0.072	-0.224	0.223	0.199	0.154	0.191						
Reci P	-0.358	-0.120	-0.381*	-0.210	0.033	-0.145	0.127	-0.001	0.416*					
Cong Pat	-0.231	-0.235	-0.081	-0.280	-0.106	0.182	-0.036	0.081	0.278	0.482**				
Cong P	-0.247	-0.223	-0.332	-0.270	0.026	-0.087	-0.014	-0.082	0.416*	0.771**	0.676**			
PerSi Pat	-0.461*	-0.204	-0.447*	-0.286	0.198	0.008	0.092	-0.076	0.147	0.423*	0.353	0.499**		
PerSi P	-0.068	-0.211	-0.259	-0.404*	-0.036	0.150	0.065	0.158	0.465*	0.474**	0.642**	0.646**	0.150	

Abbreviations: Pat = patient; P = partner; DC = Dyadic coping; QMI = Quality of Marriage Index, PHQ = Patient Health Questionnaire; GAD = Generalised Anxiety Disorder, Reci S/P = Reciprocity index Self/Partner-evaluation, Cong = Congruence index; PerSi = Perceived similarity index. **p* < 0.05; ***p* < 0.01.

eTable 4 | Regression analysis of dyadic coping within NMOSD and MOGAD patients

Dependent variable	Independent variable	Univariate analysis	Multivariate analysis	Multicollinearity	
		Spearman's rank correlation coefficient ρ (p)	Regression coefficient β (p)	Tolerance	VIF
Total DC	Depression	-0.174 (0.071)	-0.077 (0.871)	0.338	2.995
	Anxiety	-0.255 (0.007)	0.213 (0.707)	0.352	2.844
	Relationship quality	0.586 (<0.001)	1.563 (<0.001)	0.850	1.177
	Diagnosis	-0.105 (0.278)	-6.366 (0.053)	0.738	1.355
	Age	0.015 (0.881)	0.076 (0.654)	0.336	2.976
	Relationship duration	-0.044 (0.652)	-0.396 (0.020)	0.339	2.950
	EDSS	0.105 (0.300)	0.517 (0.601)	0.716	1.396
Common DC	Depression	-0.221 (0.021)	-0.041 (0.731)	0.338	2.995
	Anxiety	-0.268 (0.005)	0.055 (0.700)	0.352	2.844
	Relationship quality	0.529 (<0.001)	0.314 (<0.001)	0.850	1.177
	Diagnosis	0.095 (0.328)	0.246 (0.764)	0.738	1.355
	Age	0.122 (0.206)	0.089 (0.041)	0.336	2.976
	Relationship duration	0.026 (0.788)	-0.092 (0.032)	0.339	2.950
	EDSS	0.006 (0.949)	-0.026 (0.916)	0.716	1.396
Own stress communication	Depression	0.121 (0.209)	0.136 (0.185)	0.338	2.995
	Anxiety	-0.023 (0.816)	-0.042 (0.733)	0.352	2.844
	Relationship quality	0.243 (0.011)	0.098 (0.021)	0.850	1.177
	Diagnosis	-0.039 (0.691)	-1.165 (0.099)	0.738	1.355
	Age	-0.247 (0.009)	-0.061 (0.098)	0.336	2.976
	Relationship duration	-0.200 (0.037)	-0.044 (0.227)	0.339	2.950
	EDSS	0.064 (0.532)	0.208 (0.328)	0.716	1.396

Abbreviations: VIF = Variance inflation factor, DC = Dyadic coping,
Dependent variable: Total DC, coefficient of determination (r²): 0.467, The ANOVA model is significant (F = 11.409, p < 0.001)
Dependent variable: Common DC, coefficient of determination (r²): 0.368, The ANOVA model is significant (F = 7.555, p < 0.001)
Dependent variable: Own stress communication, coefficient of determination (r²): 0.227, The ANOVA model is significant (F = 3.809, p = 0.001)

eTable 5 | Current Literature on discrepancy indexes

Author, year, title	No. of dyads / study design	Main findings regarding discrepancy indexes
Forster F, Milek A, Breitenstein C, Senn M, Bradbury TN, Bodenmann G., 2024, Coping equally: Equity of dyadic coping and depressive symptoms among adolescent couples.	124 couples Cross-sectional questionnaire-study	This study examined the equity of DC and its link to depressive symptoms in healthy adolescent couples Depressive symptoms were higher in males who received more positive DC than they offered, whereas these symptoms were lower in those who provided more positive DC. For females, positive DC equity did not significantly affect depressive symptoms. Higher depressive symptoms were associated with both: providing more than they received (underbenefit) and getting more negative DC than they gave (over benefit) for females. Depressive symptoms in males were not significantly associated with negative DC equity. Compared to men, women reported higher levels of depressive symptoms and reported feeling less equity in DC, especially when it came to negative coping. For males, their partners' perception of positive DC equity had a stronger impact on their depressive symptoms. Greater depressive symptoms were linked to higher levels of negative DC in men, but not in women. For both genders, there was no significant correlation between positive DC levels and depressive symptoms.
Muijres P, Weitkamp K, Bodenmann G, Jenewein J., 2023, Discrepancies in dyadic coping: Associations with distress and quality of life in couples facing early-stage dementia.	37 couples Cross-sectional questionnaire-study	This study examined the DC of patients with early-stage dementia and their partners Dementia, anxiety, and indexes did not significantly correlate. Higher distress and a lower quality of life are correlated with larger discrepancies. An unequal relationship is indicated by high discrepancies across all three indexes: both spouses report more coping attempts than the other perceives. Direct coping was more common among patients than their partners, which was linked to better Quality of Life (QoL) for patients but worse QoL for partners.
Meier F, Landolt SA, Bradbury TN, Bodenmann G., 2021, Equity of dyadic coping in patients with depression and their partners.	62 couples Cross-sectional questionnaire-study	This study examined the equity of DC in couples where one partner suffers from depression and its impact on depressive symptoms Patients and partners both observed offering more DC than they received. Regardless of overbenefit or underbenefit, patients who experienced inequity in DC had higher levels of depressive symptoms. For partners, lower depressive symptoms were linked to DC levels rather than equity. Near the equity threshold, patients' depressive symptoms were at their lowest, and as inequity increased, they rose. Regardless of whether they were patients or partners, women reported higher levels of inequity in DC. High DC levels were associated with decreased depressive symptoms in male partners. In DC, overbenefit made patients feel burdened and guilty, whereas underbenefit made them feel less happy.

Tkachenko D, Franke L, Peters L, Schiffer M, Zimmermann T., 2019, Dyadic coping of kidney transplant recipients and their partners: Sex and role differences.	56 couples Cross-sectional questionnaire-study	This study examined the DC of kidney transplant recipients and their partners The majority of discrepancy indexes showed a negative correlation with partnership quality and psychological outcomes for kidney transplant recipients, regardless of gender. Better psychological outcomes were associated with low discrepancies. Higher discrepancies were associated with adverse psychological outcomes (e.g., anxiety, depression) in couples with male recipients. Greater congruence in perceptions was associated with increased anxiety and depression levels in dyads where the recipient was female, potentially reflecting stress or feelings of guilt related to recognizing their partner's considerable coping efforts. The psychological toll of ongoing dependency and disease in spite of kidney transplantation may be reflected in discrepancy indexes. When female kidney transplant patients correctly perceive their partner's coping attempts, they face a greater psychological burden. Discrepancy indexes can be used to identify hidden dynamics in relationships and guilt emotions. The total DCI score serves as the primary predictor of partnership quality, with the self-evaluation similarity index ranking second in importance.
Osin R, Pankrath AL, Niederwieser D, Döhner H, Hönig K, Vogelhuber M, et al., 2018, Dyadic coping of patients with haemato- oncological diseases and their partners: discrepancy indexes and association with social support and psychological distress.	330 couples Longitudinal questionnaire-study	This study examined the DC of patients with haemato-oncological diseases and their partners The patient's coping behaviour is better estimated by partners than the other way around. The reciprocity index is higher in partner evaluations compared to self-assessments. Congruence index: shows that partners judged the patient's behaviour more accurately than the patients did themselves, as indicated by the lower partner-assessment values. This may suggest that patients are less aware of their partner's coping strategies, most likely due to the illness context. Congruence index has a negative correlation with mental health; this can be interpreted as a potential imbalance in coping contribution and a detrimental impact on the patient's emotions of guilt due to reliance on partner support.
Gmelch S, Bodenmann G., 2007, Dyadic coping in self- and partner-perception as a predictor of relationship quality and well-being.	443 couples Cross-sectional questionnaire-study	This study examined the DC of healthy couples focusing on self- and partner-perception as a predictor of relationship quality and well-being Reciprocity index: A high index indicates greater concordance between self-perception and partner perception. Equity index: measures the subjective sense of equity between partners regarding the same behaviour. Congruence index: shows the degree of similarity between one partner's self-perceived support attempts and the other partner's perception. Among the various discrepancy measures in the Dyadic Coping Inventory (DCI), only the congruence index revealed a significant gender difference, suggesting that men tended to evaluate their partner's behaviour with greater alignment than women did. All measures of discrepancy were positively correlated with one another. These correlations were generally moderate, suggesting that while the indexes shared certain elements, they also captured distinct, non-overlapping aspects. The DCI total score and the Partnership Questionnaire (PFB) total score exhibited significant negative correlations, showing that greater discrepancies in dyadic coping (DC) were linked to lower relationship quality and reduced levels of DC, as anticipated. Of the three discrepancy indexes, the equity index was the most predictive: it provided significant predictions across all analyses (DCI subscores) and relationship quality for women, whereas for men, it was only significant in predicting relationship quality.

Abbreviations: DCI = Dyadic Coping Inventory, DC = Dyadic coping, PFB = Partnership Questionnaire, QoL = Quality of Life.

eTable 6 | Coping strategies Associated with Different Levels of Depression and Anxiety within NMOSD and MOGAD patients

	Coping strategy	p	H(4)	ε ²
Depression severity	Own stress communication	0.21	5.81	0.02
	Own supportive coping	0.99	0.35	0
	Own delegated coping	0.53	3.17	0
	Own negative coping	0.31	4.76	0.01
	Common DC	0.12	7.42	0.03
	Total own DC	0.86	1.28	0
	Total partner's DC	0.15	6.69	0.02
	Total negative DC	0.12	7.28	0.03
	Total positive DC	0.36	4.34	0
	Total DC	0.34	4.55	0.01
	Coping strategy	p	H(3)	ε ²
Anxiety severity	Own stress communication	0.95	0.33	0
	Own supportive coping	0.53	2.21	0
	Own delegated coping	0.33	3.40	0
	Own negative coping	0.05	7.76	0.04
	Common DC	0.20	4.68	0.02
	Total own DC	0.20	4.65	0.02
	Total partner's DC	0.10	6.24	0.03
	Total negative DC	0.03	9.20	0.06
	Total positive DC	0.18	4.85	0.02
	Total DC	0.09	6.48	0.03

Abbreviations: DC = Dyadic coping, H(df) = H-value of Kruskal-Wallis test with df representing the degrees of freedom, ε² = Epsilon squared, Significant differences in bold.

eTable 7 | Regression analysis of Expanded Disability Status Scale within NMOSD and MOGAD patients

Dependent variable	Independent variable	Univariate analysis	Multivariate analysis	Multicollinearity	
		Spearman's rank correlation coefficient ρ (p)	Regression coefficient β (p)	Tolerance	VIF
EDSS	Total DC	0.11 (0.3)	0.01 (0.2)	0.94	1.1
	Depression	0.28 (0.005)	0.14 (0.005)	0.38	2.64
	Anxiety	0.13 (0.19)	-0.04 (0.55)	0.37	2.68
	Age	0.3 (0.003)	0.02 (0.09)	0.88	1.14
	Diagnosis	-0.43 (<0.001)	-1.13 (<0.001)	0.86	1.16

Abbreviations: VIF = Variance inflation factor, DC = Dyadic coping, EDSS = Expanded Disability Status Scale
Dependent variable: EDSS, coefficient of determination (r²): 0.282, The ANOVA model is significant (F = 7.301, p < 0.001).