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Positive orientation in the context of ways of coping with stress and social support in patients with multiple sclerosis

Orientacja pozytywna a sposoby radzenia sobie ze stresem i wsparcie społeczne u pacjentów z diagnozą stwardnienia rozsianego

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Abstract

Introduction: The aim of this study was to assess in detail the relationship between positive orientation and coping strategies adopted to deal with stress, and perceived social support among patients with multiple sclerosis.

Material and methods: Sixty patients of the Multiple Sclerosis Outpatient Clinic operating at the L. Rydygier Specialist Hospital in Kraków participated in the study. The project was questionnaire-based. The following tools were used: the Mini-COPE Stress Coping Inventory, the SWS Social Support Scale, and the Positive Orientation Scale (P Scale).

Results: The correlation between scores on the Positive Orientation Scale and the Social Support Scale and its subscales was statistically significant, but negative. A positive correlation was found between patients' scores on the Positive Orientation Scale and the use of pro-developmental coping strategies. A statistically significant negative correlation between positive orientation and destructive coping strategies was found. The expected statistically significant differences in perceived social support between the in- and out-of-relationship groups and between men and women were not detected.

Conclusions: This study extends previous knowledge regarding the detailed relationships between positive orientation and adopted coping strategies, coping with a diagnosis of neurodegenerative disease and perceived social support. The study specifically captures the complex relationship between the variables studied and the diagnosis of multiple sclerosis. To date, this issue has been addressed only by analysing the impact of individual variables separately. The paper simultaneously combines and compares various factors supporting health.

Key words: social support, stress, positive orientation, multiple sclerosis.

Streszczenie

Wstęp: Celem pracy była szczegółowa ocena związku pomiędzy orientacją pozytywną a przyjmowanymi strategiami radzenia sobie ze stresem oraz odczuwanym wsparciem społecznym w grupie pacjentów ze stwardnieniem rozsianym.

Materiał i metody: W badaniu wzięło udział 60 pacjentów Poradni Stwardnienia Rozsianego działającej przy Szpitalu Specjalistycznym im. L. Rydygiera w Krakowie. Projekt miał charakter kwestionariuszowy. Wykorzystano następujące narzędzia: inwentarz do pomiaru radzenia sobie ze stresem Mini-COPE, skalę wsparcia społecznego (SWS), skalę orientacji pozytywnej (skala P).

Wyniki: Korelacja między wynikami w skali orientacji pozytywnej oraz skalą wsparcia społecznego oraz jej podskalami okazała się istotna statystycznie, ale ujemna. Wykazano dodatnią korelację między wynikami uzyskanymi przez pacjentów w skali orientacji pozytywnej a stosowaniem prorozwojowych strategii radzenia sobie ze stresem oraz istotną statystycznie ujemną korelację między pozytywną orientacją a destrukcyjnymi strategiami radzenia sobie. Nie stwierdzono zakładanych wcześniej istotnych statystycznie różnic w postrzeganym wsparciu społecznym między osobami pozostającymi i niepozostającymi w związkach oraz między kobietami i mężczyznami.

Wnioski: Badanie rozszerza dotychczasową wiedzę dotyczącą szczegółowych relacji pomiędzy orientacją pozytywną a przyjmowanymi strategiami radzenia sobie ze stresem, zmagania się z diagnozą choroby neurozwyrodnieniowej i odczuwanym wsparciem społecznym. Praca w sposób szczególny ujmuje złożony związek badanych zmiennych z diagnozą stwardnienia rozsianego. Do tej pory poruszano tę problematykę, analizując wpływ pojedynczych zmiennych oddzielnie. W pracy równocześnie połączono i porównano różne czynniki wspierające zdrowie.

Słowa kluczowe: wsparcie społeczne, stres, orientacja pozytywna, stwardnienie rozsiane.

Introduction

Multiple sclerosis (MS) is a chronic, progressive inflammatory-demyelinating disease with multifocal damage to the central nervous system and results in diverse neurological symptoms (Adamczyk-Sowa *et al*. 2021). MS is most commonly diagnosed between the ages of 20 and 40 (Adamczyk-Sowa *et al*. 2021). Recent data show that the total number of people in Poland afflicted with the disease is approximately 42,400 (NFZ on Health. Multiple Sclerosis 2021). As reported in previous studies, most of these people not only suffer from the somatic symptoms associated with MS but may also experience mood disturbances, e.g. apathy, anxiety or even depression (Mustač *et al*. 2021). The fact that MS is a long-term disease with progressive changes does not support maintaining patients' psychological well-being (Strober *et al*. 2018). However, there are protective factors for patients with MS – for example, Mikula and co-workers (2021) found a positive relationship between reduced severity of depressive symptoms and positive self-esteem and optimal self-management of the disease (the relationship with healthcare, social and family support, information about the disease itself, health-promoting behaviours, perceptions of treatment and barriers to treatment).

Given these implications and the previous data on the perceived difficulties of MS patients with passivity in performance and engagement in social relationships (Stoeckel and Kasser 2022), the present study addresses the importance of positive orientation in coping with stress and chronic illness. Positive orientation may be a strong and important protective factor. This construct is the inverse of Beck's triad – negative beliefs about oneself, one's life, and one's future. It encompasses both optimism and life satisfaction along with high self-esteem (Caprara *et al*. 2009). Key components of positive orientation are: positive view of: one's life, self and future (Caprara *et al*. 2012). All of those variables together explain global tendencies to formulate positive statements and evaluations of ones life and future (Laskowska *et al*. 2018). As Caprara *et al*. (2010) research has shown, it appears that positive orientation is an important variable in understanding perceived support from others and self-assessment of one's health. It is part of the individual's resources and of the whole system in which the individual is functioning. It allows better adaptation to chronic illness. Positive orientation is thus a factor that offers hope for more effective treatment (Skrzyński *et al*. 2017). As a reflection of such an orientation, patients with a diagnosis of MS continue to function actively in many spheres of life and do not significantly change their activities in terms of many socio-professional roles, despite being diagnosed with the disease (Dymecka and Gerymski 2019).

In the course of MS data show a variety of coping strategies and varying levels of social support perceived by patients (Dennison *et al*. 2009). The need for the support received also varies. For example, men with a diagnosis of MS tend to notice and report needing social support less (relative to women) (e.g. Rosiak and Zagożdżon 2017).

The literature distinguishes four types of social support: 1) emotional, 2) valuing, 3) instrumental, 4) informational (Sęk and Cieślak 2004). A detailed description can be found in Table 1.

The aim of this study of patients with MS is to assess in detail the relationship between positive orientation and the coping strategies adopted to deal with stress, and the perceived social support.

Research hypotheses

Increasingly advanced treatments, extending the period of optimal functioning of patients, entail the need for constant monitoring of their psychological state, in particular, in the context of selected protective factors of mental health – positive orientation, social support and adaptive coping strategies.

Based on current knowledge, the following hypotheses were adopted:

H1: Patients' scores on the Positive Orientation Scale will correlate directly and proportionally with scores on the Perceived Social Support Scale (based on: Skalski 2019).

H2: Patients' scores on the Positive Orientation Scale will correlate directly and proportionally with

Table 1. Characteristics of types of social support. Source: own based on Kmiecik-Baran, 1995

No.	Type of support	Characteristics of the support
1.	Emotional	Concerns the exchange of emotions – receiving positive and sharing the negative
2.	Valuing	Concerns the exchange of values such as acceptance, respect, a sense of belonging
3.	Instrumental	Concerns the exchange of information, ways of dealing with difficult situations, assistance in day-to-day activities, including material help
4.	Informational	Concerns the exchange of information relating to a difficult situation which helps to understand and deal with it, e.g. medical, psychological and legal advice

the use of pro-developmental coping strategies (based on: Maguire *et al*. 2021, Kupcewicz and Jóźwik 2019).

H3: Women will score higher on the Perceived Social Support Scale than men (based on: Dymecka 2019).

H4: Those in relationships will score higher on the Perceived Social Support Scale than those not in relationships (based on: Dymecka 2019).

Material and methods

Methods

The study used questionnaire methods and a metric created for the collection of medical and demographic data.

The survey metric included questions about demographic data such as age, gender, place of residence (rural, small/large/medium town), education (primary, vocational, secondary, tertiary), marital status, type of disease (relapsing-remitting, primary progressive, primary progressive with exacerbations, secondary progressive). The metric also included the date the diagnosis was received, as well as information on the pharmacological treatment implemented by the neurologist.

Statistical methods

The results were calculated using PS IMAGO PRO 8.0 software. Exploratory analyses with moderation modelling were carried out in JASP 0.16.3.0 software.

Due to the lack of a normal distribution of the results (calculated by the Shapiro-Wilk test), non-parametric tests (Spearman's rho correlation and Mann-Whitney *U* test) were used to verify the hypotheses. The threshold for statistical significance was $p < 0.05$.

A previous study (Skalski 2019) indicated a mediating role of perceived social support in relation to resiliency and positive orientation for a general population. We wanted to check whether it would be different for the population of MS patients with more dynamic challenges and changes in life and a specific gender structure of patients. For those positive orientation seems to be the key and therefore we wanted to check whether positive orientation may have a mediating role in relation to perceived social support in the case of patients diagnosed with a chronic illness and its forms.

For that the structural equation modelling was incorporated with form of illness and gender being predictors, positive orientation being a mediator (intermediary variable) and perceived social support as an outcome.

The study used:

The Mini-COPE Inventory for the Measurement of Coping with Stress (Juczyński and Ogińska-Bulik 2009), which is a tool for measuring coping with stress in adults. It assesses typical ways of responding in a stressful situation. It consists of 28 statements that fall under 14 strategies. The strategies are respectively: active coping, planning, positive reframing, substance use, behavioural disengagement, self-blame, emotional support, use of informational support, self-distraction, denial, venting, religion, acceptance and humour.

The SWS Social Support Scale (Kmiecik-Baran 1995) – this tool assesses the strength of support received by the patient in four dimensions: instrumental, emotional, valuing and informational. The entire scale consists of 16 statements, 4 (3 positive and 1 negative) addressing each dimension.

The Positive Orientation Scale (P Scale) (Łaguna *et al*. 2011) – used to examine positivity understood as the consolidation of three elements: self-esteem, optimism and satisfaction with life. The scale consists of 8 statements. Respondents rate on a five-point scale the extent to which they agree with each statement.

The study group consisted of 60 patients of the Multiple Sclerosis Outpatient Clinic at the L. Rydygier Specialist Hospital in Kraków, aged 18 to 66 years (SD = 12.23). Women accounted for 74.6% of the study population (44 patients), reflecting the gender distribution of the Polish patient population (NFZ on Health. Multiple Sclerosis 2021).

Patients were invited to participate in the study while waiting for follow-up appointments at the outpatient clinic. All voluntarily gave informed consent to participate in the study after reading the project information and answering additional questions. Subjects received a diagnosis of multiple sclerosis between 2003 and 2022 (SD = 5.44). The most common type of multiple sclerosis was the relapsing-remitting form (diagnosed in 81.7% of respondents). Of the respondents, 10 people (16.7%) reported being single, 32 people (53%) reported being in a formal relationship, 9 people (15%) reported being in an informal relationship, 2 people (3.3%) reported being a widow/widower, 6 people (10%) reported being divorced, and 1 person (1.7%) did not answer.

Patients were invited to participate in the study during their routine doctor's appointments. All potential participants were asked to familiarise themselves with the description of the study and encouraged to ask additional questions before signing the consent form. Patients filled out the questionnaires independently with a researcher

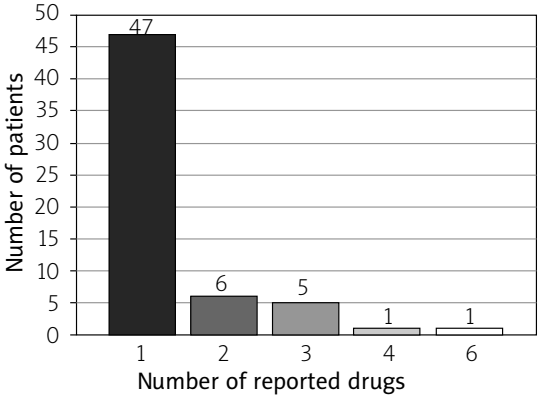

Fig. 1. Number of medicines mentioned by patients

waiting nearby ready to assist in case of additional questions. Information about the type of disease and medications taken was provided by the patients and verified by the medical staff of the outpatient clinic (with their consent to do so). The time needed to complete all questionnaires was approximately ten minutes.

The study was conducted from November 2021 to May 2022.

The present study received a positive opinion from the Ethical Committee established at the Institute of Applied Psychology, operating at the Faculty of Management and Social Communication, Jagiellonian University.

Results

Figure 1 shows the pharmacotherapy data – the number of drugs given by patients in response to the question about the treatment implemented by the neurologist. Table 2 quantifies the pharmacotherapy implemented.

The results of statistically significant tests are presented in Tables 3-4.

As a result of the non-parametric tests used in the analysis, the correlation between scores on the Positive Orientation Scale and the Social Support Scale and its subscales proved statistically significant, but negative (Social Support Scale (rho = –0.409, $p < 0.001$), informational support (rho = –0.281, $p = 0.031$), instrumental support (rho = –0.328, $p = 0.011$), valuing support (rho = –0.276, $p = 0.035$), and emotional support (rho = –0.476, $p < 0.001$) (Table 1).

In addition, there was a positive correlation between patients' scores on the Positive Orienta-

Table 2. Names and numbers of drugs reported by patient

Name of active substance	Number of reports
Dimethyl fumarate	26
Ocrelizumab	16
Natalizumab	12
Interferon beta	10
Teriflunomide	4
Glatiramer acetate	4
Tizanidine	2
Baclofen	2
Prednisone	2
Amezepine	1
Biotin	1
Neurovit	1
Pregabalin	1
Fingolimod	1

Table 3. Correlations of Positive Orientation Scale scores with the Social Support Scale and its subscales in subjects with a diagnosis of MS (Spearman's rho correlation)

	SPscore	Significance
SWS	–0.409**	0.001
SWS (inf.)	–0.281*	0.031
SWS (instr.)	–0.328*	0.011
SWS (val.)	–0.276*	0.035
SWS (emot.)	–0.467**	0.000

SPscore – score of the Positive Orientation Questionnaire – P Scale, SWS – Social Support Scale, SWS (inf.) – subscale of the Social Support Scale – informational support, SWS (instr.) – subscale of the Social Support Scale – instrumental support, SWS (val.) subscale of the Social Support Scale – valuational support, SWS (emot.) – subscale of the Social Support Scale – emotional support

Table 4. Correlations of Positive Orientation Scale scores with coping strategies highlighted by the Mini-COPE Stress Coping Inventory in subjects with a diagnosis of MS (Spearman's rho correlation)

Variable	Spearman's rho	Significance
Active coping	0.375**	0.003
Planning	0.467**	0.000
Positive reframing	0.431**	0.001
Substance use	–0.134	0.312
Behavioural disengagement	–0.262*	0.045
Self-blame	–0.337**	0.009
Emotional support	0.517**	0.000
Use of informational support	0.330*	0.011
Self-distraction	0.147	0.265
Denial	–0.237	0.071
Venting	–0.101	0.449
Religion	0.366**	0.004
Acceptance	0.478**	0.000
Humour	0.272*	0.037

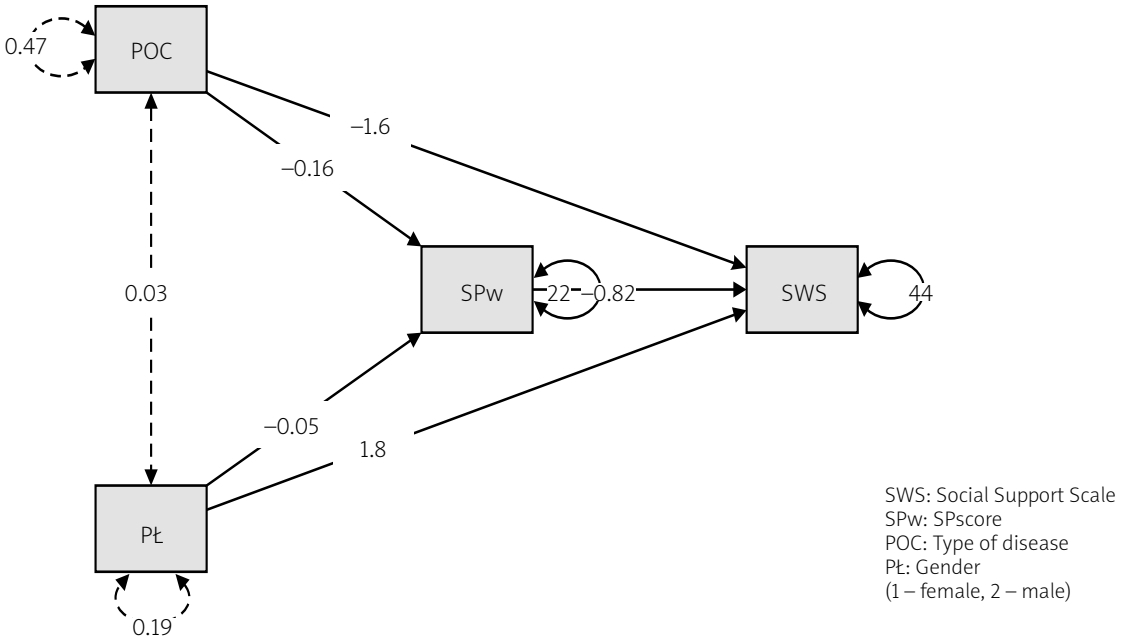

Fig. 2. Modelling the moderating role of positive orientation

tion Scale and the use of pro-developmental stress coping strategies (active coping (rho = 0.375, $p < 0.01$), planning (rho = 0.467, $p < 0.001$), positive reframing (rho = 0.431, $p < 0.01$), acceptance (rho = 0.478, $p < 0.001$), humour (rho = 0.272, $p = 0.037$), religion (rho = 0.366, $p < 0.01$), emotional support (rho = 0.517, $p < 0.001$), and use of informational support (rho = 0.330, $p = 0.011$)). There was a statistically significant negative correlation between positive orientation and destructive coping strategies in the subscales behavioural disengagement (rho = –0.262, $p = 0.045$), self-blame (rho = –0.337, $p < 0.01$).

The analysis with the Mann-Whitney *U*-test did not detect the expected statistically significant differences in perceived social support between the group of those in and out of relationships ($U = 323.5$, $p = 0.669$) and in perceived social support between the group of women and men ($U = 347.5$, $p = 0.472$).

As part of the exploratory analyses, additional moderation analyses were conducted in JASP using the model shown in Figure 2. However, these did not show statistically significant moderation of positive orientation. The indirect effect (from form of illness and gender through positive orientation to perceived social support) was not found to be statistically significant.

In addition, non-parametric correlation analyses were performed in the PS IMAGO PRO between years since diagnosis and positive orientation, coping strategies and perceived social support. They showed no significant static co-variation (Table 5).

Discussion

The correlation between scores on the Positive Orientation Scale and the Social Support Scale (also its subscales) were proved statistically significant, but negative, indicating that people with higher levels of positive orientation in the research group showed lower levels of perceived social support in all its dimensions – informational, instrumental, valuing and emotional.

Such characteristics may have been observed due to the fact that people who are highly positively oriented need and perceive less received social support – they rely on their own competences. Due to the special relationship of positive orientation to the perspective of the future, it is likely that people who focus their attention on the future seek less support and subjectively expect less support. This is particularly relevant in the context of current research on the relationship of positive orientation in patients with MS in the Polish population. Szcześniak *et al*. (2022) found a positive correlation between positive orientation and the search for and presence of meaning in life, a mediating role of meaning seeking in the relationship of positive orientation and the Big Five personality dimensions.

However, due to the quantitative nature of the self-report survey data, as well as the limited literature describing the relationship between positive orientation and social support, it is not possible to

Table 5. Correlations of Social Support Scale scores, Positive Orientation Scale scores, and coping strategies highlighted by the Mini-COPE Stress Coping Inventory with the years since the subjects' MS diagnosis (Spearman's rho correlation)

Variable	Spearman's rho	Significance
SPscore	–0.089	0.502
SWS	–0.046	0.730
SWS (inf.)	0.026	0.847
SWS (instr.)	–0.117	0.377
SWS (val.)	–0.023	0.862
SWS (emot.)	–0.082	0.539
Active coping	0.128	0.334
Planning	0.016	0.902
Positive reframing	–0.003	0.985
Substance use	–0.070	0.600
Behavioural disengagement	–0.039	0.767
Self-blame	–0.096	0.471
Emotional support	0.075	0.572
Use of informational support	–0.049	0.712
Self-distraction	–0.161	0.224
Denial	–0.159	0.228
Venting	0.048	0.715
Religion	–0.142	0.284
Acceptance	–0.005	0.967
Humour	–0.253	0.053

SPscore – score of the Positive Orientation Questionnaire – P Scale, SWS – Social Support Scale, SWS (inf.) – subscale of the Social Support Scale – informational support, SWS (instr.) – subscale of the Social Support Scale – instrumental support, SWS (val.) subscale of the Social Support Scale – valuing support, SWS (emot.) subscale of the Social Support Scale – emotional support, other names – names of coping strategies highlighted in the Mini-COPE Stress Coping Measurement Inventory

fully assess the observed relationship between the scales, e.g. the negative correlation.

The present study showed a positive, statistically significant correlation between patients' scores on the Positive Orientation Scale and the use of pro-developmental coping strategies: respondents reporting high scores on the Positive Orientation Scale were more likely to use pro-developmental coping strategies.

Positive orientation as measured by the P Scale indirectly focuses on beliefs related to the future. The correlation of P Scale scores and pro-developmental coping strategy scores indirectly supports the conjecture of the 2021 systematic review (Maguire *et al*.) – a focus on the future is likely to be associated with the use of pro-developmental coping strategies. Additionally, given that the components of positive orientation are the inverse of Beck's depressive triad, the results observed in this study are consistent with previous findings – lower levels of depression correlate positively with strategies based on positive reappraisal and problem solving, whereas high levels of depressive traits correlate positively with escape and emotional strategies (Mohr *et al*. 1997). In turn, lower intensity of depressive traits promotes the selection of coping strategies other than emotional coping strategies (Santangelo *et al*. 2021). Additionally, the selection of pro-developmental strategies may play a moderating role in the self-regulation of people with MS (Wilski *et al*. 2021), which contributes, for example, to the effectiveness of rehabilitation interventions.

In contrast, no statistically significant differences in perceived social support were detected between the male and female groups or between the groups of people in and out of relationships.

The results partly differ from those observed by Dymecka (2019), among others, in which married people and women reported statistically significantly higher levels of social support. The differences may be due to the specificity of the study group (e.g. specific specialised care dedicated to the study subjects at the selected centre) or to increasing general public awareness of support – dedicated to patients with a diagnosis of MS and other alternative relationships that may increase the feeling of receiving support.

As is known from previous studies (e.g. Riley 2017), mental well-being affects the pro-health activities and impacts stress management, which is related to our immune system. Moreover, MS patients are at high risk of experiencing fatigue, anxiety and even depression (AlSaeed *et al*. 2022; Peres *et al*. 2022). According to Peres *et al*. (2022) systematic interventions targeting prevention of depression for MS patients are yet to be created. This study aimed to find the key components of protective factors and their relations. As positive orientation correlates positively with pro-developmental coping strategies, it may be the key to design a mental screening standards for MS patients. It could not only address issues stressed by Peres *et al*. (2022) but also relates to the finding of Wilski *et al*. (2021) that active coping strategies connect with self-management, which affects engagement in the rehabilitation process. Perhaps positive orientation components may be used for both screening and also developing targeted psychological intervention programmes for patients diagnosed with MS.

Limitations of the study

This study was conducted at a single centre, which, on the one hand, ensured greater consis-

tency in the context of guiding pharmacological interventions, but may also have led to a lack of normal distribution in statistical analyses.

The small number of subjects and the type of disease course prevalent in the self-reported sample, e.g., the relapsing-remitting form, prevented a full comparison between disease forms.

The lack of neuropsychological assessment may have influenced the less precise control of variables related to both apathy and depression, as well as disinhibition or adequate situation perception.

In the future, in order to increase the possibility of generalising the results to the Polish MS patient population, the study should be extended to other clinical centres. Additionally, in order to more fully understand the negative correlation between positive orientation and social support, it would be valuable to complement the quantitative methods used in the study with qualitative methods.

Conclusions

In conclusion, this study extends previous knowledge regarding the detailed relationships between positive orientation and the coping strategies adopted to deal with stress, the struggle with a diagnosis of neurodegenerative disease and perceived social support. In this project, an operationalized combination of psychological theories and constructs defining positive orientation, social support and stress coping strategies was analysed, probably for the first time, in a group of patients with a diagnosis of multiple sclerosis.

The results of the present study may lay the foundations for an expanded knowledge base, a better understanding of the reported psychological states of MS patients and a more targeted design of therapeutic and rehabilitation interventions for this group. For example, in therapeutic interactions, it would be valuable to strengthen the components of positive orientation, e.g. self-esteem, optimism and life satisfaction, particularly given its positive association with the use of pro-developmental coping strategies, which directly affect the assessment of quality of life and mental health in the form of harmony of physical, mental and social dimensions.

Disclosure

The authors declare no conflict of interest.

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