Psychotherapy and Psychosomatics

Received: May 2, 2017
Accepted after revision: January 28, 2018
Published online: March 13, 2018

Psychother Psychosom
DOI: 10.1159/000487329

Facing the Unknown: Fear of Progression Could Be a Relevant Psychological Risk Factor for Depressive Mood States among Patients with Multiple Sclerosis

Jörn Nielsen[a], *Jochen Saliger*[a], *Christian Montag*[b, c], *Sebastian Markett*[d], *Charlotte Nöhring*[e], *Hans Karbe*[a]

[a]Department of Cognitive Rehabilitation, Neurological Rehabilitation Centre Godeshöhe, Bonn, Germany; [b]Department of Molecular Psychology, Institute of Psychology and Education, Ulm University, Ulm, Germany; [c]Key Laboratory for Neuroinformation/Centre for Information in Medicine, School of Life Science and Technology, University of Electronic Science and Technology of China, Chengdu, China; [d]Department of Psychology, Humboldt University, Berlin, Germany; [e]Leipzig Education Centre for Psychotherapy, Leipzig, Germany

Anxiety disorders are widespread among patients with chronic physical diseases, such as diabetes mellitus, cancer, and rheumatic diseases. Studies based on psychosocial stress screenings and disease-specific questionnaires have concluded that one specific anxiety is central to the patient's life, i.e. the fear that the disease will progress, with all its consequences. Herschbach et al. [1] have called this the *fear of progression* (FoP). They defined FoP as a reactive, non-neurotic emotional response that patients are fully aware of. The fear is based on the personal experience of a life-threatening or incapacitating illness, and is experienced with emotional, cognitive, behavioural, and physiological qualities [1].

Multiple sclerosis (MS) is also a progressive disease with an unpredictable course. It is the most common cause of chronic neurological disability in young adults, with onset typically between the ages of 20 and 40 years [2]. According to our research, FoP seems to be underrecognized in people with MS. We aimed, therefore, to explore the relationship between FoP (Fear of Progression Questionnaire, FoP-Q [1]) and depression (Center for Epidemiologic Studies Depression Scale, CES-D [3, 4]), while controlling for demographic, clinical, and psychological variables.

The study sample (n = 106) showed typical demographic data for MS cohorts admitted to a neurological rehabilitation centre, with a predominance of females (76%) and a relapsing-remitting MS disease course (65%) (69 with relapsing-remitting MS, 13 with secondary-progressive MS, 21 with primary-progressive MS, 2 with clinically isolated syndrome, and 1 with undetermined MS course). The mean age of the participants was 45.44 ± 9.16 years (range 25–65 years) (81 females: 45.23 ± 9.64, 25 males: 46.12 ± 7.52). The duration of education was 10.67 ± 1.46 years (range 9–13 years). Of the 106 participants, 18, 20, 44, and 24 individuals had 13 (general qualification of university entrance), 12 (subject-related entrance qualification), 10 (intermediate school-leaving certificate), and 9 (secondary-school qualification) years of school education, respectively. The sample could be divided into 89 participants (84%) with *low* and 15 (14%) with *high* occupational attainment (2 participants could not be classified) [5]. The mean Expanded Disability Status Scale score was 3.46 ± 1.44 (range 0.5–7.5). The mean disease duration (years since diagnosis) was 7.75 ± 7.44 years (range 0–32 years). Eighteen participants were receiving antidepressants. Compared to published cut-off values, the sample demonstrated high fatigue scores (Fatigue Scale for Motor and Cognitive Functions, FSMC [6]; mean = 71.56 ± 16.35; range = 35–100), whereas the depression value was within normal limits (mean = 21.17 ± 12.59; median = 19; range = 2–54).

The study data showed no influence of gender, age, or disease duration on FoP. Furthermore, we found no variation in mean FoP-Q levels for different MS courses (relapsing-remitting MS, secondary-progressive MS, primary-progressive MS). This result suggests that FoP develops independently of the course that MS takes. Correlation analysis showed moderate to large associations of FoP-Q scales with depression (CES-D; $0.36 < r < 0.71$) and with both action control subscales (Action Control Scale [7]; preoccupation: $0.35 < r < 0.63$, hesitation: $0.35 < r < 0.51$). There were only small correlations between FoP-Q scales and the FSMC sum score and FSMC cognition score ($0.27 < r < 0.31$).

Hierarchical regression analysis predicting depression revealed a model in which 70% of the variance in the CES-D were explained by the following set of predictors (Table 1). The most valuable predictor was the FoP-Q subscale *affective reaction*. The items of this subscale describe anxiety about various domains of life, anxiety triggers, and forms of expression of anxiety. The positive β-coefficient indicates a frequent coexistence of anxiety and depressive reaction patterns. The next most relevant predictor was the FSMC sum score, which points to the close relationship of this predominant MS symptom to the symptoms of depression. The *coping scale* of the FoP-Q appears to be a valuable predictor of depression as well. The inverse relationship suggests that the better the anxiety coping competencies, the lower the severity of depressive mood states. Moreover, we found the Action Control Scale factor *preoccupation* to be a relevant variable. The negative β-coefficient indicates a reciprocal relationship: the larger this component of state-orientated behaviour, the lower the success in depressive mood regulation. Finally, the variables of *education* and *occupational attainment* were included in the regression model. Both seem to have an indirect protective effect on the level of depression. These findings accord with those of Pavlou and Counte's [8] analysis of data on MS adjustment factors, such as attitudes, stereotypical beliefs, and disease knowledge. They found that a person's education level was a predictor of all 3 of these measures.

E-Mail karger@karger.com
www.karger.com/pps

Dr. Jörn Nielsen
Department of Cognitive Rehabilitation
Neurological Rehabilitation Centre Godeshöhe, Waldstrasse 2–10
DE–53177 Bonn (Germany)
E-Mail joern.nielsen@gmx.de

Table 1. Hierarchical regression analysis (stepwise entering), predicting depression (CES-D)

CES-D	Variable	*R* change	*F* change	*p* value	B	SE B	β	*p* value
Step 1	*Demographic variables (age, gender, education, occupational attainment),* $R^2 = 0.17$ (adj. $R^2 = 0.14$)							
	Occupational attainment	0.078	8.604	0.004	–7.969	3.419	–0.222	0.022
	Education	0.042	4.856	0.030	–3.110	1.204	–0.248	0.011
	Age	0.049	5.872	0.017	–0.316	0.130	–0.224	0.017
Step 2	*Clinical variables (disease duration, EDSS, FSMC, antidepressive therapy),* $R^2 = 0.45$ (adj. $R^2 = 0.42$), $\Delta R^2 = 0.28$							
	FSMC sum score	0.290	41.640	0.000	0.358	0.060	0.462	0.000
	Education	0.061	9.450	0.003	–2.887	0.990	–0.231	0.004
	Age	0.036	5.886	0.017	–0.345	0.111	–0.245	0.002
	Antidepressive therapy	0.040	6.833	0.010	6.524	2.644	0.195	0.015
	Occupational attainment	0.024	4.255	0.042	–5.837	2.829	–0.162	0.042
Step 3	*Psychological variables (ACS),* $R^2 = 0.63$ (adj. $R^2 = 0.61$), $\Delta R^2 = 0.18$							
	ACS preoccupation	0.446	82.116	0.000	–1.925	0.237	–0.535	0.000
	FSMC sum score	0.102	22.744	0.000	0.248	0.051	0.320	0.000
	Education	0.056	14.081	0.000	–0.2402	0.803	–0.192	0.003
	Occupational attainment	0.023	6.169	0.015	–5.739	2.311	–0.160	0.015
Step 4	*FoP-Q variables (affective reaction, family/partnership, occupation, loss of autonomy, coping),* $R^2 = 0.72$ (adj. $R^2 = 0.70$), $\Delta R^2 = 0.9$							
	FoP-Q affective reaction	0.497	100.959	0.000	0.369	0.091	0.309	0.000
	FSMC sum score	0.108	27.543	0.000	0.209	0.046	0.270	0.000
	FoP-Q anxiety coping	0.048	13.911	0.000	–0.488	0.151	–0.202	0.002
	ACS preoccupation	0.024	7.293	0.008	–0.932	0.277	–0.259	0.001
	Education	0.027	8.849	0.004	–1.757	0.735	–0.140	0.019
	Occupational attainment	0.014	4.670	0.033	–4.419	2.045	–0.123	0.033

CES-D, Center for Epidemiologic Studies Depression Scale; EDSS, Expanded Disability Status Scale; FSMC, Fatigue Scale for Motor and Cognitive Functions (sum score); ACS, Action Control Scale; FoP-Q, Fear of Progression Questionnaire. B, Unstandardized Coefficient; SE B, standard error of B; β, standardized coefficient.

Overall, our results can be interpreted as an indication that FoP is a meaningful emotional stressor in patients with MS, especially in those with depression. It seems to be wise to distinguish FoP from psychiatric-based anxiety disorders, because individuals with MS are confronted with a real threat, and their reaction pattern should be considered as a functional response to an extraordinary, everlasting life event. This distinction should be considered in psychotherapeutic treatments and, in our opinion, also applies to other MS-related anxiety disorders (e.g., fear of falling, fear of losing bladder control, fear of blindness).

The strong relationship between FoP scales and depression corresponds to previous findings, which had observed that persons with MS express more variability in their emotional reactions to the disease than other chronic illness groups [9]. Brown et al. [10] suggested that the high comorbidity of anxiety and depression in MS studies might reflect a causal relationship between these symptoms, and that they are part of a broader psychosomatic disorder (a mixed anxiety-depression disorder). That would imply that adjustment to MS and its challenges needs to be conceptualized therapeutically as a multidimensional psychological process.

Owing to the preliminary nature of our study, several shortcomings limit the generalizability of our findings, including the study's cross-sectional design, the missing control group and the exclusive use of self-reported measures. Therefore, future research aimed at exploring the precise temporal and causal relationships of our symptom comorbidity should use a prospective longitudinal design. Moreover, in the future, we plan to examine the concept of FoP (in relation to depression) in patients with chronic diseases that do not affect the CNS.

Acknowledgements

The position of C.M. is funded by a Heisenberg grant awarded to him by the German Research Foundation (DFG, MO2363/3-2).

Disclosure Statement

J.N., J.S., S.M., H.K., C.N., and C.M. have no conflicts to declare and the research (aside from the position of C.M.) received no specific grant from any funding agency in the public, commercial, or non-profit sectors.

References

1 Herschbach P, Berg P, Dankert A, Duran G, Engst-Hastreiter U, Waadt S, Keller M, Ukat R, Henrich G: Fear of progression in chronic diseases. Psychometric properties of the Fear of Progression Questionnaire. J Psychosom Res 2005;58:505–511.

2 McNulty K: Coping with multiple sclerosis: considerations and interventions; in Martz E, Livneh H (eds): Coping with Chronic Illness and Disability. New York, Springer Science Publisher, 2007, pp 289–311.

3 Radloff LS: The CES-D scale: a self-report depression scale for research in the general population. Appl Psychol Meas 1977;1:385–401.

4 Hautzinger M, Bailer M: Allgemeine Depressionsskala (ADS). Manual. Göttingen, Hogrefe, 1993.

5 Ghaffar O, Fiati M, Feinstein A: Occupational attainment as a marker of cognitive reserve in multiple sclerosis. PLoS One 2012;7:e47206.

6 Penner IK, Raselli C, Stöcklin M, Opwis K, Kappos L, Calabrese P: The Fatigue Scale for Motor and Cognitive Functions (FSMC): validation of a new instrument to assess multiple sclerosis-related fatigue. Mult Scler 2009;15:1509–1517.

7 Kuhl J: Action versus state orientation: psychometric properties of the Action Control Scale (ACS-90); in Kuhl J, Beckmann J (eds): Volition and Personality: Action versus State Orientation. Seattle, Hogrefe & Huber, 1994, pp 47–59.

8 Pavlou M, Counte M: Aspects of coping in multiple sclerosis. Rehabil Counsel Bull 1982;25:138.

9 Dalos NP, Rabins PV, Brooks BR, O'Donnell P: Disease activity and emotional state in multiple sclerosis. Ann Neurol 1983;13:573.

10 Brown RF, Valpiani EM, Tennant CC, Dunn SM, Sharrock M, Hodgkinson S, Pollard JD: Longitudinal assessment of anxiety, depression, and fatigue in people with multiple sclerosis. Psychol Psychother 2009;82:41–56.