

Chronic fatigue and indicators of long-term employment disability in psychosomatic inpatients

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Chronische Müdigkeit und Indikatoren der Langzeitarbeitsunfähigkeit bei stationären psychosomatischen Patienten

Zusammenfassung. Das Hauptziel dieser Studie war, Indikatoren der Langzeitarbeitsunfähigkeit bei chronischer Müdigkeit zu ermitteln. Zu diesem Zweck wurde eine Querschnittuntersuchung einer randomisierten Stichprobe (n=1000, Responderquote 83,9%) aus Patienten einer Psychosomatischen Fachklinik durchgeführt. In 51,1% der Fälle (n=429) wurde eine zum Erhebungszeitpunkt als stark erlebte andauernde Erschöpfung gefunden. Sie stand ohne nachvollziehbare Relation zu tatsächlich vollbrachten Anstrengungen. 159 (37,1%) Patienten dieser Gruppe waren arbeitsunfähig. Sie bildeten die Hauptzielgruppe dieser Untersuchung. Signifikant (P jeweils <0,01) mehr Patienten der Zielgruppe arbeiteten stundenweise, waren überproportional lange arbeitsunfähig (50,9% aller Arbeitsunfähigen mehr als 6 Monate im letzten Jahr) und fühlten sich durch Konflikte mit den Vorgesetzten und/oder Kollegen belastet. Sie klagten häufiger über körperliche Beschwerden, wiesen jedoch keine signifikant häufigere Komorbidität mit psychischen Störungen auf. Subjektiv fühlten sich jedoch nicht die arbeitsfähigen Patienten mit chronischer Müdigkeit mehr belastet, sondern diejenigen, die geringeren Belastungen ausgesetzt waren. Diese hatten im Vergleich zu den Patienten, die arbeitsfähig waren, eine stärkere Fixierung auf somatische Beschwerden, keine adäquate Wahrnehmung von körperlichen und psychischen Empfindungen sowie Schwierigkeiten mit anderen Menschen und mit einer geregelten Tätigkeit zurechtzukommen (P jeweils <0,01). Eine zukünftige prospektive Untersuchung dieser Indikatoren könnte zur Formulierung von Prädiktorvariablen führen, die bei chronischer Müdigkeit Langzeitarbeitsunfähigkeit voraussagen, deren Berücksichtigung zu einer rechtzeitigen sozialmedizinischen Einschätzung und Behandlung beitragen könnte.

Schlüsselwörter: Chronische Müdigkeit, Komorbidität, Arbeitsunfähigkeit, Indikatoren.

Summary. The major goal of this study was to determine indicators of long-term disability for psychosomatic

inpatients with chronic fatigue syndrome. To this end, a cross-sectional study was performed with a random sample of patients (n=1000, response rate: 83.9%) at a psychosomatic inpatient clinic. 51.1% of the patients (n=429) reported intensely persistent exhaustion that had no logical relation to actual exertion. 159 (37.1%) patients in this group were disabled from working and these comprised the main target group of this study. Significantly more patients in the target group worked part time, were disabled for a disproportionately long period of time (50.9% of all were disabled for more than 6 months in the previous year), and felt stressed because of conflicts with their superiors and/or colleagues (in each case, P<0.01). While more frequent psychological comorbidity was not found, they reported physical complaints more often. It was not the patients fit for work who felt more burdened with chronic fatigue, but rather the employment-disabled, who were actually exposed to fewer demands. These patients had, in comparison with those fit to work, a stronger fixation on somatic complaints, inadequate perception of physical and psychic sensations, difficulties getting along with other people and in coping with a regular job (in each case, P<0.01). Prospective examination of these indicators could help detect predictor variables for long-term disability in chronic fatigue. Such predictors could contribute to timely social-medical assessment and treatment.

Key words: Chronic fatigue, co-morbidity, employment disability, indicators.

Introduction

Since 1980, the clinical concept of neurasthenia – as a disorder with overwhelmingly neurotic origins – has regained significance. This probably results from some scholars viewing chronic fatigue syndrome (CFS), fibromyalgia (FM), and a number of somatic disorders, such as multiple chemical sensitivity (MCS), typically linked to environmental factors as modern variations of the neurasthenia concept [34]. In a study by Farmer et al. [9], 97% of the patients diagnosed with CFS also fulfilled the diagnostic criteria for neurasthenia, as well as for a variety of other psychiatric disorders.

In spite of extensive research in this area, these syndromes were not previously viewed as independent diseases and correspondingly not included in the current versions of the ICD-10 and DSM-IV-TR. The currently accepted guidelines for the diagnosis of CFS are based on criteria from Fukuda et al. or on the older and more restrictive criteria of Holmes et al. [13, 23]:

The major criterion according to Fukuda et al. is persistent exhaustion, lasting at least six consecutive months, and which is

- unexplainable through another illness,
- not the consequence of ongoing exertion,
- not substantially alleviated by bed rest and
- so pronounced that it clearly reduces average levels of performance.

The minor criteria consist of:

- sore throat,
- tender cervical or axillary lymph nodes,
- “wandering”, non-inflammatory joint pain,
- impairment of concentration or short-term memory,
- unrefreshing sleep and
- prolonged, generalized, post-exertional indisposition (>24 h).

The reported prevalence rates of chronic fatigue fluctuate between 0.04% and 20% [3, 4, 17, 19, 27, 28, 36, 46]. Apart from sampling differences, this diversity is presumably due to the use of different diagnostic criteria and inconsistent prioritization of individual symptoms [6]. An exemplary discussion of neurasthenia as an independent entity in comparison with (the more likely organically caused) related clinical pictures can be found in Kapfhammer [25]. In Germany 30,000 people were estimated to be afflicted in 2002 [16].

The mechanisms and factors preceding and triggering this syndrome require further research and clarification [33, 38]. Laboratory diagnostic methods and extensive medical-technical procedures interfere with psychodynamic considerations [27, 34, 39], which postulate a relationship between maternal overprotection, the “belief-systems” developed therefrom, basic value systems, children’s causal assumptions and problem perceptions, and a subsequent ailment with CFS [12].

The present study focuses exclusively on the major criteria of pathological exhaustion and persistent indisposition; these were assessed retrospectively for the previous twelve-month period using the Fukuda criteria [8]. This specific approach seems justified, since the diagnoses of anxiety disorders, somatoform disorders, and depressive disorders without psychotic features, as well as neurasthenia are common and compatible with a diagnosis of CSF [9, 27, 33].

The goal of this study of an inpatient population was to assess the prevalence of CFS, and its co-morbidity and accompanying life-circumstances, while focusing on the relationship between CFS and the (un)employment status of the patients. The following three questions were investigated:

1. Is there a relationship between chronic fatigue and employment disability in this sample?

2. How do CFS patients who are capable of working differ from those who are incapable of fulfilling the requirements related to employment?
3. Can indicators for fatigue-induced long-term employment disability be identified and validated as predictor variables for use in prospective studies?

Methods

We surveyed patients in the Inntalklinik (Germany), a clinic for psychosomatic medicine and psychotherapy, in a random cross-sectional trial. Psychosomatic clinics in Germany specialize in treating a wide spectrum of disorders such as affective disorders, eating disorders and borderline personality disorders, as well as somatoform disorders. Patients with alcohol and drug problems, or suffering acute psychotic episodes, and patients who endanger themselves or others are generally treated in psychiatric inpatient units in Germany. Treatment fees are covered either by health insurance or by the German statutory pension insurances (corresponds to the social security system). In the Inntalklinik the fees of almost all patients are met by the German statutory pension insurance: this implies a high degree of chronic illness and a high proportion of patients with somatoform disorders.

The final diagnosis of all patients was obtained with the Structured Clinical Interview (SCID I and II) according to the Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM-IV) with subsequent ICD-10 recodification (International Classification of Diseases, 10th Version).

Criteria for exclusion were age under 16 years, other conditions viewed as influencing the major criteria of persistent exhaustion, or other factors preventing the patients from filling out the questionnaire: illiteracy, neuro-psychiatric disorders (schizophrenia, bipolar psychoses, psychotic depressions, delusional disorders, dementias, anorexia nervosa or bulimia), medical disorders (malignancies, autoimmune diseases, endocrine disorders, infectious diseases and other chronic illnesses), intoxication (e.g., heavy metals, chemical solutions and pesticides) or medicinal side-effects (e.g., antidepressants, tranquilizers).

The study aimed at assessing 1000 consecutive patients in order to base the results on a large sample and ensure sufficiently sized subgroups. Thus, 30% of all the patients admitted to the clinic between 1997 and 2002 were planned to be included in the study, with every admitted patient having the same probability of participating in the study.

Following a simple randomization procedure through Excel tables, random numbers (held confidentially by the clinic administration) were assigned to the patients at the beginning of treatment. The patients were recruited weekly during admission to the clinic: e.g., from 20 patients admitted during any week, six (30%) were randomly selected and asked by the professional staff to participate in the study.

To ensure that the enrolled patients were ‘blind’, the aim of the study was first made known to them after finishing the survey, and those surveyed had no prior contact with previous patients. After informed consent was obtained, the patients’ data were collected. No patient withdrew from the study. In order to ‘blind’ both the professional staff involved in recruiting patients and handling questionnaires and the physicians who performed the medical examination, the aim of the study was also first made known to them after completion of the survey.

The 839 (83.9%) patients who agreed to participate at admission had the following ICD-10 admission diagnoses:

F32–F34 (depressive disorders, $n=417$; 49.7%), F40–F41 (phobic and anxiety disorders, $n=243$; 29.0%), F42 (obsessive-compulsive disorders, $n=20$; 2.4%), F48 (other neurotic disorders, $n=74$; 8.8%) and F60 (personality disorders, $n=85$; 10.1%).

No further evaluation was undertaken with data from patients ($n=161$; 16.1%) who either met the criteria for an organic disease ($n=71$), other exclusion criteria ($n=39$), or refused to participate in the study ($n=51$).

In total, 141 variables were evaluated: sex, age, height, weight, and a variety of variables from validated German tests, including the Questionnaire for Life Story and Partnership (FLP), the Scale for Survey of Quality of Life (SEL), the Existential Orientation Scale (CIPS-Bf-S), the Partnership Questionnaire (PFB), the Leipzig Incidence and Psychological Stress Questionnaire (LEBI), the Survey of Life Satisfaction (FLZ), the Giessen Complaint Survey (GBB), the Survey for Collection of Health Behaviour Data (FEG), and the assessment of functional capacity according to the criteria of the "Bundesversicherungsanstalt fuer Angestellte" (BfA, German statutory pension insurance). On the basis of theoretical considerations and our clinical experience, we selected individual items to correspond with our topics of interest: life situation and life satisfaction, health and sexuality, and medical and psychotherapeutic treatment.

The patients filled out the questionnaires independently and anonymously. The professional staff checked the data for completeness, hence the 100% response. The physicians assessed functional capacity. The data were fed to the computer twice, independently, and automatically checked for deviations: 3.5% of the entries were accordingly identified as erroneous and corrected.

For statistical analysis we used the program STATISTICA (Version 6, StatSoft, Inc., Tulsa, OK, USA). Since the data were not normally distributed, we used the Mann-Whitney U-Test for comparison of continuous variables. For binary or categorical variables, we used the chi-square test. Taking multiple testing into account, a Bonferroni correction was also applied. Only significant differences ($P<0.01$) are presented in this study. We employed a risk ratio (RR) and then a 95% confidence interval (CI), as well as an attributable fraction (AF), for reporting the risk factors related to CFS in adulthood for psychosomatic inpatients.

The medical examination, including investigation of all laboratory parameters, took place at the beginning of the inpatient treatment. Data from patients with a medical condition fitting the exclusion criteria were not included in statistical analysis. The final diagnosis of CFS was in accordance with the criteria of Fukuda et al. [8].

From the surveyed patient pool, 51.1% ($n=429$) fulfilled the Fukuda criteria for CFS. As a first step, this group (average age: 41.7, $SD=10.5$; women: $n=344$, 80.2%) was compared with the remaining 410 patients who did not receive a CFS diagnosis (No-CFS; average age: 43, $SD=11.9$; women: $n=321$, 78.3%).

The CFS group ($n=429$) was then further divided into three subgroups (based on patient assessments). At the time of the survey, 159 patients had been on sick leave for more than four weeks in the past 12 months (37.1%, average age: 43.3, $SD=11.0$; women: $n=117$, 73.6%) and 243 patients had taken sick leave for less than four weeks in the last year and were viewed as being fit to work (56.6%, average age: 40.3, $SD=9.8$; women: $n=204$, 83.9%). These two groups were compared with each other in a second step of analysis. The remaining 27 patients did not provide useful information regarding their ability to work (6.3%, average age: 41.0, $SD=10.6$; women: $n=23$, 85.2%) and were therefore excluded from this specific analysis.

In the subgroup of patients who were unfit for work, 81 showed long-term impairment, i.e., had taken sick leave for longer than six months (50.9%; average age: 43.3, $SD=11.0$; women: $n=57$, 70.3%). As a third step of analysis, these patients were compared with the 243 CFS patients fit for work.

Results

CFS patients in comparison with the No-CFS group

The two groups were compared for symptoms associated with chronic fatigue (tests: CIPS-Bf-S, GBB; Table 1). In comparison with the No-CFS group ($n=410$), the afflicted patients (CFS, $n=429$) more frequently reported having chest pains, painful urination, nausea, numbness or muscle weakness, unpleasant tingling, loss of tactile perception, loss of hearing, hallucinations, poor

Table 1. Co-symptomatology with CFS in the surveyed random sample compared with patients without CFS (No-CFS)

Symptomatology	CFS ($n=402$)		No-CFS ($n=410$)		P <
	N	%	N	%	
Chest pains	351	87.3	90	21.9	0.01
Painful urination	357	88.8	67	16.3	0.01
Increased nausea	379	94.3	93	22.7	0.01
Numbness or muscle weakness	387	96.3	71	17.3	0.01
Unpleasant tingling	389	96.8	47	11.5	0.01
Loss of tactile perception	384	95.5	36	8.8	0.01
Loss of hearing	382	95.0	39	9.5	0.01
Hallucinations	381	94.8	41	10.0	0.01
Poor memory	391	97.3	111	27.1	0.01
Poor concentration	388	96.5	119	29.0	0.01

N number of patients suffering from this symptom; *P* probability of error after a Bonferroni adjustment.

memory and concentration (in each case, $P < 0.01$). Among the men, erectile dysfunctions were more frequent (CFS: $n = 73$; 17.0% / No-CFS: $n = 24$; 5.8%, $P < 0.01$).

Employment-disabled CFS patients in comparison with CFS patients fit to work

Tests: FLP, SEL, CIPS-Bf-S, PFB, LEBI, FLZ, GBB, FEG, BfA-Criteria.

In comparison with the chronically fatigued who were fit for work (CFS-No-ED, $n = 243$), the group of chronically fatigued and employment-disabled patients (CFS-ED, $n = 402$) had significantly more individuals who had worked part-time before becoming disabled (CFS-ED: $n = 89$; 22.1% / CFS-No-ED: $n = 21$; 8.6%, $P < 0.01$) and significantly fewer who rated their psychological (CFS-ED: $n = 56$; 13.9% / CFS-No-ED: $n = 81$; 33.3%, $P < 0.01$) and physical (CFS-ED: $n = 59$; 14.7% / CFS-No-ED: $n = 102$; 42.0%, $P < 0.01$) job-related stress as "negligible." In addition, the disabled more often considered their job to be at risk (CFS-ED: $n = 141$; 35.1% / CFS-No-ED: $n = 34$; 14.0%, $P < 0.01$) and, accordingly, were also more often afraid of losing their job (CFS-ED: $n = 149$; 37.1% / CFS-No-ED: $n = 31$; 12.7%, $P < 0.01$) and not being able to return there after recovery (CFS-ED: $n = 325$; 80.8% / CFS-No-ED: $n = 92$; 37.9%, $P < 0.01$). Further, this group of employment-disabled people thought more frequently about problems at the workplace, even during vacation (CFS-ED: $n = 241$; 59.9% / CFS-No-ED: $n = 58$; 23.9%, $P < 0.01$), and also reported being stressed by conflicts with their superiors more often (CFS-ED: $n = 173$; 43.0% / CFS-No-ED: $n = 43$; 17.7%, $P < 0.01$); similarly, conflicts with colleagues were also more frequently cited (CFS-ED: $n = 133$; 33.1% / CFS-No-ED: $n = 31$; 12.7%, $P < 0.01$).

Persons who suffered from fatigue and were employment disabled more frequently felt that they were basically not in a position to pursue regular employment (CFS-ED: $n = 330$; 82.1% / CFS-No-ED: $n = 81$; 33.3%, $P < 0.01$) and less often deemed work as a significant purpose of life (CFS-ED: $n = 121$; 30.1% / CFS-No-ED: $n = 26$; 10.7%, $P < 0.01$). These persons also applied for a pension more frequently (CFS-ED: $n = 137$; 34.1% / CFS-No-ED: $n = 17$; 7.0%, $P < 0.01$). Chronic exhaustion and employment disability were significantly associated with the absence of vocational training (CFS-ED: $n = 96$; 23.9% / CFS-No-ED: $n = 29$; 11.9%, $P < 0.01$).

Physical complaints generally viewed by both groups of patients as being of purely physical origin (CFS-ED: $n = 204$; 50.7% / CFS-No-ED: $n = 40$; 16.5%, $P < 0.01$) were shown to have a greater subjective significance for the disabled group (CFS-ED: $n = 202$; 50.2% / CFS-No-ED: $n = 51$; 21.0%, $P < 0.01$). In their subjective opinion they coped less well with their physical stress (CFS-ED: $n = 346$; 86.1% / CFS-No-ED: $n = 99$; 40.7%, $P < 0.01$) and more frequently reported having fear of unusual physical responses (CFS-ED: $n = 215$; 53.5% / CFS-No-ED: $n = 59$; 24.3%, $P < 0.01$).

Significant differences emerged between the two groups regarding a decrease in the previous 12 months in a variety of variables: in taking on responsibility (CFS-ED: $n = 305$; 75.9% / CFS-No-ED: $n = 88$; 36.2%,

$P < 0.01$), in carrying out strenuous occupations (CFS-ED: $n = 338$; 84.1% / CFS-No-ED: $n = 114$; 46.9%, $P < 0.01$), in their ability to walk quickly (CFS-ED: $n = 229$; 57.0% / CFS-No-ED: $n = 53$; 21.8%, $P < 0.01$), in their ability to concentrate (CFS-ED: $n = 297$; 73.9% / CFS-No-ED: $n = 97$; 39.9%, $P < 0.01$), in their ability to deal with the public (CFS-ED: $n = 301$; 74.9% / CFS-No-ED: $n = 94$; 38.7%, $P < 0.01$), in their ability to cooperate with others (CFS-ED: $n = 253$; 62.9% / CFS-No-ED: $n = 58$; 23.9%, $P < 0.01$), in the ability to lift and carry loads (CFS-ED: $n = 237$; 58.9% / CFS-No-ED: $n = 72$; 29.6%, $P < 0.01$), in physical mobility (CFS-ED: $n = 321$; 79.8% / CFS-No-ED: $n = 98$; 40.3%, $P < 0.01$), and in self-sufficient personal hygiene (CFS-ED: $n = 104$; 25.9% / CFS-No-ED: $n = 19$; 7.8%, $P < 0.01$).

At the time of data collection, a higher proportion of the disabled were taking psychoactive drugs (CFS-ED: $n = 329$; 81.8% / CFS-No-ED: $n = 121$; 49.8%, $P < 0.01$), and fewer in this group expressed the desire to reduce medication (CFS-ED: $n = 281$; 30.1% / CFS-No-ED: $n = 42$; 82.7%, $P < 0.01$).

The disabled patients clearly more often viewed their familial and domestic obligations as demanding (CFS-ED: $n = 349$; 86.8% / CFS-No-ED: $n = 116$; 47.7%, $P < 0.01$) and were more frequently dependent on outside help in order to take care of themselves (CFS-ED: $n = 203$; 50.5% / CFS-No-ED: $n = 46$; 18.9%, $P < 0.01$).

Among the disabled patients, life satisfaction was viewed as impaired by restriction of mobility (CFS-ED: $n = 199$; 49.5% / CFS-No-ED: $n = 43$; 17.7%, $P < 0.01$) and by problems with vision and hearing (CFS-ED: $n = 140$; 34.8% / CFS-No-ED: $n = 41$; 16.9%, $P < 0.01$); they were dissatisfied with their work (CFS-ED: $n = 349$; 86.8% / CFS-No-ED: $n = 106$; 43.6%, $P < 0.01$); they also perceived their quality of life as restricted by persistent impairments (CFS-ED: $n = 325$; 80.8% / CFS-No-ED: $n = 92$; 37.9%, $P < 0.01$) and by the increased effort required by every single physical activity (CFS-ED: $n = 338$; 84.1% / CFS-No-ED: $n = 109$; 44.8%, $P < 0.01$). In addition, the disabled more often had the feeling they were a burden to others (CFS-ED: $n = 229$; 57.0% / CFS-No-ED: $n = 56$; 23.0%, $P < 0.01$).

Age, sex, actual life situation and actual unemployment played no role. Similarly, in the area of psychiatric diagnosis, there were no significant differences between the groups.

Long-term employment-disabled CFS patients in comparison with CFS patients fit for work

Tests: FLP, SEL, CIPS-Bf-S, PFB, LEBI, FLZ, GBB, FEG, BfA-Criteria.

Among the disabled patients, 81 (50.9% of the disabled) were long-term employment-disabled, i.e., they had taken sick leave for longer than six months (CFS-L-ED). There were significant differences (predictors) in this subgroup compared with the working CFS patients (CFS-No-ED) (Table 2), but no significant differences in psychiatric diagnosis. In general, the differences between the long-term employment disabled and the CFS patients fit to work were more pronounced.

Table 2. CSF patients employment-disabled (CFS-L-ED) longer than 6 months (ED>6) compared with those fit for work (CFS-No-ED). Predictors of long-term disability

Long-term disability – characteristics of the group	CFS-No-ED (n=243)		CFS-L-ED (n=81)		RR	95%-CI		AF	P<
	N	%	N	%		from	to		
Housewife/husband, unemployed	46	18.9	35	43.8	2.3	6.8	7.8	-0,6	0.01
Conflicts with superiors	43	17.7	55	67.9	2.2	1.7	2.9	-0,5	0.01
Conflicts with colleagues	31	12.7	49	60.5	2.3	1.7	3.1	-0,6	0.01
Work is not an important part of life	26	10.7	38	46.9	1.8	2.6	3.0	-0,4	0.01
Fixation on somatic complaints	92	37.9	62	76.5	2.0	1.6	2.5	-0,5	0.01
Fear of unusual physical reactions	59	24.3	62	76.5	1.2	1.1	1.3	-0,2	0.01
Severe restrictions in strenuous activities, e.g., running fast for more than 1 km	98	40.3	73	90.1	1.6	1.1	1.4	-0,4	0.01
Severe restrictions in concentrating for longer periods	97	39.9	66	81.5	1.5	1.4	1.8	-0,3	0.01
Difficulties in dealing with the public	94	38.7	72	88.9	1.6	1.3	1.7	-0,4	0.01
Severe restrictions in taking over responsibility for other people or a sequence of work operations	88	36.2	68	83.9	1.8	1.2	1.6	-0,4	0.01
Purely physical self-justification of the illness	92	37.9	62	76.5	2.0	1.6	2.5	-0,5	0.01
Minimal ability to provide for oneself	46	18.9	47	58.0	2.8	1.7	2.1	-0,6	0.01
Minimal satisfaction with work	106	43.6	76	93.8	1.3	1.3	1.7	-0,2	0.01
Continuous presence of somatic complaints	92	37.9	75	92.6	1.5	1.0	1.2	-0,3	0.01
Feeling of persistent presence of physical strain in daily life	109	44.8	79	97.5	1.4	1.0	1.2	-0,3	0.01
Difficulties getting along with others	55	22.6	50	61.7	1.6	1.5	1.7	-0,4	0.01

N Numbers of patients suffering from this symptom; *RR* risk ratio; *95%-CI* confidence interval; *AF* attributable fraction; *P* probability of error after a Bonferroni adjustment.

Discussion

Although various attempts have been made to relate the symptoms of CFS to dysfunctions of the immune system, to viral infections or specific laboratory diagnostic parameters, there is not yet sufficient and convincing evidence [33,38]. The diagnostic utility of corresponding markers has been viewed as marginal at best [4]. Initial research detected a possible problem with circulation in CFS patients [31] and first studies based on a sample of mono- and dizygotic twins point to some genetic dispositions [10, 19]. Furthermore an increase of strain and stressful life events in the three months prior to the onset of CFS has been reported in a retrospective assessment; however, this could not be replicated in a prospective study [20, 41]. Based on current research findings, a multifactorial etiology of CFS should be assumed.

Obscure genesis of the symptoms, differing examination procedures and types of treatment, as well as varying conceptualizations on the part of physicians can lead to diverging interpretations through the patients. In spite of a

clear tendency in the patients to view their symptoms mainly as a physical disorder, and while emotionally occupying them in a less negative fashion than MS patients, the symptoms appear to fulfil an extremely important function in the patient's life history [8, 43].

Compared with the group of patients without this diagnosis, our CFS patients reported suffering more frequently from a variety of symptoms such as chest pains, painful urination, nausea, numbness or muscle weakness, unpleasant tingling, loss of tactile perception, hearing impairments, hallucinations, and problems with memory and concentration.

In comparison with the CFS patients fit for work, physical complaints of – from the patients' perspective – primarily somatic origin were of greater significance for the employment-disabled CFS patients, who claimed to a greater extent to experience not only a decline in their ability to cope with physical stress and strenuous occupations, such as walking quickly or carrying heavy loads, but also of their hearing and vision. They also reported a greater reduction of their cognitive and social capacities as

well as their level of general functioning (e.g., physical mobility and activities of daily living). Furthermore, the disabled patients were consuming more psychoactive drugs. These and a variety of other factors were perceived as leading to a reduction of life quality and satisfaction. The quality of life of CFS patients has been shown to be lower than in other groups of patients with chronic illnesses [1, 18, 40]. The results of an earlier Australian study by Schweitzer et al. showed that 47% of the afflicted had to retire from work because of CFS, that these persons lost socially meaningful integration, and that their supportive social network was restricted to the family and the closest circle of friends [35]. In a prospective study by Hill et al. the majority of patients were unemployed because of their ill health and remained so over a 3-year period [21].

It is noteworthy that, in spite of the persistent fatigue and exhaustion reported to accompany minimal effort, more than half the patients in our random sample were fit for work. Short et al. showed that CFS patients do not differ in their cognitive and intellectual abilities in test situations [37]. Other studies have found that CFS patients achieve almost or completely normal results in tests of muscle function and performance efficiency [15, 42]. In general, while differences in performance tests between CFS patients and non-CFS sufferers are not very striking, the CFS patients fundamentally differ in their subjective assessments and attitudes relating to functional capacity [33]. White and Schweitzer have also reported higher scores in perfectionism for CFS patients, involving more fear of making mistakes [35].

Our results also stress the relevance of the patients' subjective experience. A greater proportion of the employment-disabled CFS patients felt basically incapable of pursuing regular employment, had applied for a pension and worried that their job was at risk. More individuals in this group were dissatisfied with their work and less often viewed work as an important purpose in life. There was a significant relationship between the absence of vocational training and CSF combined with employment disability.

While the disabled group more often reported having conflicts with their superiors and colleagues, they also spent more time thinking about problems at the workplace – even during vacation; at the same time, more of them rated their psychological and physical job-related stress as being “negligible.” In general there was a reduced readiness in this group to work on, and hence improve, some of the impairing factors [8].

Approximately half the disabled group fulfilled the criteria for long-term employment disability, having taken more than six months' sick leave in the year prior to admission. For this group of chronically ill individuals, the above differences were even more characteristic. Although some of the differences between the disabled group and the group fit to work could be perceived as representing a greater degree of symptomatic severity [21, 31], the differences in subjective assessment and attitude, the lower occupational status in the disabled group, and the general lack of differences in psychiatric diagnoses and physician-rated functional capacity would not support this assumption. Applying the notion of different degrees of severity to the assessment of CFS requires further research to clarify conceptual and etiological issues, since

severity ratings have hitherto been based solely on self-assessments by the patients.

According to Dendy et al. [8], CFS sufferers hardly ever see their current symptoms in a negative emotional light. Their readiness to change something (e.g., to engage in sports, reduce medication, or scrutinize their own attitudes on “the negligible importance of work in the context of life” in psychotherapy) is comparatively meagre.

If retirement is individually planned based on age (the majority of our sample was between 41 and 60 years old) and restricted quality of life (as a result of multiple symptoms), then chronic exhaustion could be used to justify one's own psychological state and desires [34]. The study by Masuda et al. showed that treatment of non-infectious CFS patients hardly improved their symptoms, and few people from this group returned to work [29]. Findings from Wilson et al. point in the same direction [48]: they showed that age, duration of illness, amount of neuroticism, preceding psychiatric illnesses and functional level of the immune cells are not reliable predictors. The psychological attitude towards the symptoms and coping strategies appear to have a greater influence [33]. This could be interpreted as an increased tendency to bale out of an unsatisfactory and strenuous work life.

If it is true that CFS patients can only achieve the same level of performance as healthy people through increased effort, then our study results provide food for thought [37]. In our sample, it was not those fit for work that felt more under pressure but rather those who were actually exposed to a smaller amount of stress.

The variables listed in the profile analysis of the employment-disabled CFS patients could be viewed as indicators of long-term employment disability (more than half of all the disabled patients in our study were so affected, cf. Table 2) and should of course be tested in a longitudinal study to examine their usefulness as predictors.

For these target patients specifically, planning appropriate employment that offered assistance in integration, and taking previous research findings into account, could help prevent long-term employment disability. Recent research has also demonstrated that CFS symptoms can be improved through gentle physical conditioning and the use of behavior therapy designed to increase daily activity [7, 14, 45]. Accordingly, one reason for early retirement could be reduced through planned programs aiming at maintaining the ability to work.

With regard to social-medical assessment, formulating a more precise differential diagnosis, taking the findings of this and future related studies into account, could lead to more specific treatment for CFS patients as psychosomatic in-patients. While developing a socio-medically (and socio-politically) acceptable prognosis for these patients, more attention needs to be given to coping strategies, subjective theories of disease and the patients' motivation. As human dignity is so vulnerable, more attention could be given to the psyches and minds of our patients [11, 22, 24]. Primary prevention strategies, traditional treatments, and the search for alternatives and complementary approaches could each on its own and taken together lead in a useful direction [26, 49, 43, 45]. Future study should clarify these issues as well as further examine the

natural course of CFS. The generalizability of our results for CFS patients other than those in psychosomatic inpatient treatment remains to be demonstrated. These patients, similarly to those contemplating suicide, usually go first to their general practitioners, who could also benefit from improved psychosomatic training in their formal education [2, 32, 44]. Timely admission of patients to a specialized clinic could further help prevent the ailment from becoming chronic. In CFS, modern psychiatry and psychosomatics must accommodate the rational spirit of the time and respond to the societal challenges of the present.

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