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**Is it a case of “work-anxiety” when patients report bad workplace characteristics and low work ability?**

**Running head:** work-anxiety in work ability assessment

**Key words:** work anxiety, work ability, workplace

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**Abstract****Aims**

Work-anxiety may come along with a negative view of the workplace and is therefore an important factor of influence in work ability assessment. Work ability assessment requires to distinguish between descriptive workplace characteristics, work ability, and work-anxiety. This study explores the empirical relationships between patient-reported workplace characteristics, work-anxiety, and subjective and objective work ability measures.

**Methods**

125 patients in medical rehabilitation before vocational reintegration were interviewed concerning their vocational situation, and filled in a questionnaire on work-anxiety (WPS), subjective mental work ability (WAI) and perceived workplace characteristics (KFZA, JATS). Treating physicians gave independent socio-medical judgments concerning the patients' work ability and impairment, and need for supportive means for vocational reintegration.

**Results**

Patients with high work-anxiety reported workplace characteristics systematically more negative. Also low subjective work ability went along with reports of problematic workplace characteristics. When controlled for work-anxiety, subjective work ability remained related only with social workplace characteristics and with work achievement demands, but independent from situational or task characteristics.

Sick leave duration and physicians' judgment of work ability are not systematically related with patient-reported workplace characteristics.

**Conclusions**

In socio-medical work ability assessment, patients with high work-anxiety must be expected to report more problematic workplace characteristics and lower work ability. For detecting potentially biased patient's view on work characteristics and work ability, the patient must be explored concerning work-anxiety. Detecting work-anxiety is important in order to initiate early work-directed treatment, and avoid long-term sick leaves.

**Key words**

Work anxiety, work ability, workplace, sick leave, work characteristics

## Introduction

To decide whether a person is able to work or not requires exploration of the person's health and capacity status on the one hand, and exploration of the work characteristics on the other hand. Work ability has been operationalized as a subjective concept [1] in work psychology research. However, in clinical practice, the decision on work ability is a physician-rated socio-medical judgment [2]. In socio-medical work ability assessment first the workplace characteristics and work demands have to be explored. Then "work ability" must be judged, i.e. whether the patient's health and capacity status allows fulfilling the work demands.

Frequent and long-term sick leave respective work disability is especially associated with mental disorders [2]. There has been a broad research on the relationship between workplace and mental health problems [3-6]. Mental health problems are chronic by their nature [7] and lead to participation problems in different domains of life, especially at work. Thereby work-anxiety plays a central role, as it is specifically related with long-term sick-leave and means a risk factor for return to work [8,9].

Work-anxiety can occur as a comorbid disorder and thus complication in general mental disorders, but also as an alone-standing disorder [8,10]. Work-anxiety is associated with a rather negative perception of the workplace [11]. As anxiety is stimulus-bound and can be learned or be provoked (e.g. work-related posttraumatic stress reactions) [12], there are several potentially anxiety-provoking characteristics at work which must be considered when exploring workplace characteristics and demands [13,14]:

1. Working people are often together at their workplace with colleagues in groups. They see each other daily on narrow space, e.g. in offices, and pass a great part of their day time together. Thus it is normal that *social conflicts* may arise the more one is exposed to colleagues. There is often no possibility to avoid

these conflicts. „Pack behavior and pecking order“, i.e. the natural fight for one's own social rank in a group, competitions behavior between group members [15], as well as the inborn signals of social endangerment like gaze and body language [16] can have an anxiety-provoking effect.

2. Also the exposition towards *supervisors* as such may be potentially anxiety-provoking. This is due to the supervisor's hierarchical position with controlling and sanctioning functions [17]. Regular communication across hierarchy levels and good transparency are suggested and may avoid unnecessary anxiety induction.

3. For supervisors, even *coworkers* offer anxiety-provoking potential, as they can sabotage the supervisor's plans, show counterproductive work behavior [18], arise to become competition, engage in a rulebook slowdown, or appear aggressive towards the supervisor.

4. Different *demands for achievement or supervisors controlling of achievements* can be perceived as threatening. Having experienced or even imagining failing in work tasks is an unconditional anxiety-provoking stimulus. It may be that work duties exceed the persons' capacities, or that the work amount is enduringly too high. High requirements at work are especially perceived as stressful when they come along with low possibilities for control and low social support [19]. In case of enduring experience of bad success, anxiety of failing can grow.

5. Beside conflicts with colleagues, there may be also *endangerment by thirds*, like verbal or physical assaults by patients, students, clients, or raids.

Professionals like fire fighters, police men, psychiatry nurses or bank employees are especially exposed to dangerous thirds [e.g. 20].

6. Beside social threats, there are accidents or other *endangerments by the work environment*, e.g. allergenes or chemical substances [21,22]. On the one hand these may really contribute to health problems or on the other hand they may trigger anxiety concerning health endangerment.
7. Experiencing *low control* and insecurity is also an unconditional anxiety-provoking stimulus. This is especially true for people with low tolerance of uncertainty. At the workplace there may be low scope of action, or low job control [23] and lacks of transparency which restrict control perception and may provoke anxiety. Examples are the (anticipated) uncertainty who will be the next for transfer or downsizing, or the introduction of new technologies [24], or even wide-reaching changes like company closure or merger [25]. Moreover, daily minor hassles of uncertainty like poor reliability of work equipment, or lack of information, or sudden change of work duties can provoke worries and tension. Also subjectively perceived workplace insecurity may be a source of threat and stress.

For the purpose of a work ability judgment, patients must be asked for a description of their workplace characteristics and work demands. In patients with work-anxieties it is not always easy to explore the work characteristics objectively. The patients' reports may be biased into the direction of a rather negative perception of their work [11].

However, for the socio-medical judgment of work ability a preferably objective description of the workplace situation and work demands is needed. In clinical practice it is mostly not possible to observe the workplace situation of the patients in order to get more complete information. Working conditions must be explored from the patients. Therefore a rather objective description of work characteristics must be aimed. In work ability judgment,

physicians need to know whether and in which wise patients' work perception may be confounded with work-anxiety and low perceived work ability.

### **Aims and questions of research**

This study is the first to explore the relations between patient-reported workplace characteristics, patients' work-anxiety, and patient's perceived and physician rated work ability.

1. The first question is whether two different measures for workplace characteristics – one focusing on general work psychological constructs (KFZA) [26], the other one focusing on exposition towards different work characteristics (JATS) [13] – describe different aspects of work perception.
2. The second question is in which wise workplace characteristics reported by the patients (KFZA, JATS) are related with patients' subjective work ability perception and work-anxiety.
3. The third question is whether and how patient-perceived work characteristics (KFZA, JATS) are related with the physician-rated socio-medical work ability prognosis and with the past sick leave duration.

Results of this study will give hints whether and in which wise patient-reported work characteristics must be considered to be potentially biased or influenced by work-anxiety and subjective work ability. This is important to know when exploring the workplace characteristics from the patient as the first step in the socio-medical work ability assessment.

### **Method**

#### *Procedure and participants*

Consecutive patients with mixed somatic and mental health problems in a three-week neurological inpatient rehabilitation were investigated in a structured diagnostic interview on mental disorders (MINI) [27] and work-anxiety (Work-Anxiety-Interview) [10] in the beginning of their rehabilitation stay. Only patients in working age were approached, the interview was embedded into clinical routine. Patients with severe somatic illness for whom “return to work” was not indicated as a topic for rehabilitation were not approached.

After the interview, the patients were asked to fill in a questionnaire on their workplace situation and work perception. Two work description questionnaires were used: The Short Questionnaire for Job Analysis (KFZA) [26] contains mixed items reflecting descriptive or also subjective work perceptions. The Job-Anxiety-Trigger-Scale (JATS, Table 1) [13] contains rather descriptive items, in terms of degree of exposure towards different workplace characteristics which may be anxiety-triggers.

166 patients were approached in the initial diagnostic interview. Complete questionnaire data could be assessed from 125 patients, the return rate of the self-rating questionnaires was 75.3%. Comparing those patients who participated only in the interview ( $n = 41$ ) and those who also filled in the questionnaire ( $n = 125$ ), there were no differences concerning sick leave duration and basic work characteristics, but the group of patients who did not fill in the questionnaire had significantly more often applied for disability pension (34% vs. 4.8%,  $p < .05$ ), and were more often unemployed (32% vs. 16%,  $p < .05$ ) than the patients who completed the questionnaire.

The 125 patients with full data were on average 50.67 ( $SD = 9.04$ ) years of age, 52.4% were women. 81% had an apprenticeship completion certificate, 13.5% had a university diploma, 2.4% a master craftsman qualification, 0.8% were in professional education, and 2.4% had no professional certificate. 84.1% presently obtained a workplace. In the present or last work situation, 33.3% were employed blue-collar workers, 4% unskilled workers, 39.7% white-

collar employees without leading position, 16.8% white-collar employees with leading positions, 6.6% were self-employed. The patients came from all professional fields, i.e. 34.1% from manufacturing and production, 15.1% office workers with regular client contacts, 10.3% office workers without client contacts, 12.7% education and teachers, 8.7% health care with patients, 4.8% security and delivery services, 7.1% salespersons in supermarket or retail, and the self-employed worked in different fields. 4.8% had applied for disability pension due to any chronic health problem. Concerning mental health, 29.4% were diagnosed one or more present or past mental disorders, and 23% were presently affected from a mental disorder (most often by depressive episode ( $n = 12$ ) and generalized anxiety disorder ( $n = 11$ ), adjustment disorder ( $n = 11$ ) and workplace phobia ( $n = 7$ ). This rate is comparable to the epidemiology of mental disorders in the general population [28].

### *Instruments*

#### *Short Questionnaire for Job Analysis KFZA*

The Short Questionnaire for Job Analysis (KFZA) [26] is a self-rating inventory on workplace conditions. The KFZA contains items from different established work analysis questionnaires. It covers 26 items over eleven dimensions: perceived job control (i.e., scope of action at work, 3 items), job variety (i.e. broadness of work tasks, 3 items), holism of the job (2 items), perceived social support from colleagues and supervisors (3 items), (need for) cooperation with colleagues and superiors (3 items), perceived qualitative overload (2 items) and quantitative overload (2 items), interruptions (2 items), unpleasant physical working conditions (2 items), information and participation (2 items), and possibilities for benefits and personal development (2 items). Each item is rated on a scale from 1 = do not agree at all to 5 = agree completely.

*Job-Anxiety-Trigger-Scale JATS*

The Job Anxiety Trigger Scale (JATS) [13] is a self-rating questionnaire containing 47 items on seven dimensions, i.e. degree of exposure towards colleagues (7 items), degree of exposure towards supervisors (4 items), potential threat by coworkers (6 items), demands for achievement and controlling by supervisors (9 items), exposure to and threats by thirds at work (4 items), exposure to dangerous situations (8 items), responsibility and uncontrollable changes (9 items). Cronbachs alphas of the subscales are between .716 to .785. Items are rated on a five-step Likert scale from 0 = not true at all to 4 = completely true. Examples of the items of each subscale are presented in Table 1.

**Table 1**

Item examples of the Job-Anxiety-Trigger Scale

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**Exposure towards colleagues**

In this work I have to rely on colleagues.

In this work I have to find and defend my place in a working team.

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**Exposure towards supervisors**

While I am working, I am watched by my supervisor.

I have to present and defend my work towards my supervisor.

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**Exposure towards threat by coworkers**

Coworkers can give valuations on me (e.g. in employee surveys).

At this work, I must defend unpopular management decisions towards coworkers.

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**Controlling and demands for achievement**

During my working time, everything I do is monitored (e.g. by camera, investigation, tachograph).

I am threatened with sanctions in case of deficits in my work achievements.

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**Exposure towards thirds**

In this work I must speak in public (e.g. giving a speech, guidance).

In this work I am confronted with aggressive thirds (e.g. patients, students, clients).

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**Exposure towards environmental threats**

In this work I am a great part of the time exposed to chemicals, rays, electricity, munition, or other physical dangers.

In my work I may come into situations where physical violence may occur.

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**Responsibilities and uncontrollability**

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In my work I have high responsibility for other persons.

At work it is expected that I am nearly always reachable (per handy, email, also in the evening or at days off).

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*Work Ability Index: Subjective mental work ability*

Beside their workplace perception, patients were asked for a self-rating of their subjectively perceived mental work ability (for their present or if presently unemployed for their last workplace) according to the Work Ability Index (WAI) [1] on a scale from 0 = completely unable for work to 10 = best work ability.

*Physician-rated work ability*

Independent physicians' socio-medical judgments on work ability and impairment were obtained for each patient. This contained quantitative work ability prognosis (able to work under 3 hours a day, 4-6 hours a day, or more than six hours) and a statement whether the patient had an impairment in work ability due to mental disorders (mental work ability impairment is present or not). Additionally, suggestions for workplace adjustment (necessary or not) and stepwise reintegration means (necessary or not) were taken from the medical report.

*Workplace Phobia Scale: Work-Anxiety*

The degree of global work anxiety was measured with the Workplace Phobia Scale (WPS) [8] a short rating with 13 items which ask for work-related panic-like anxiety with physiological arousal and anxious cognitions (first factor), and work-related avoidance behavior (second factor). The Workplace Phobia Scale has been validated with a DSM-based

structured diagnostic interview on work-related anxieties [8]. Cronbach's alpha in this present study was .913.

#### *Sick leave duration*

Sick leave duration before assessment was asked from the patients: we asked for the cumulated duration of sick leave in the past twelve months in weeks, and for the present sick leave duration directly before the assessment.

#### **Statistical analysis**

In a first step, Spearman correlations between the different dimensions of the two work description instruments are calculated in order to investigate whether that the KFZA and the JATS describe different and thus complementary aspects of the work situation.

In a second step, patient-reported workplace characteristics (KFZA, JATS) are set into relation with the different measures of the socio-medical work ability judgment, and with the work-anxiety degree (WPS) and subjective mental work ability (WAI). Thereby partial correlations will be calculated in order to clear in which way subjective workplace characteristic reports (KFZA, JATS) are confounded with work-anxiety (WPS).

#### **Results**

##### *Relationship between differently assessed workplace characteristics (KFZA, JATS)*

Table 2 shows the correlations between the dimensions of the Short Questionnaire for Job Analysis (KFZA) and the Job Anxiety Trigger Scale (JATS). Both instruments describe only partly overlapping aspects of work. There were moderate significant correlations between KFZA “qualitative” and “quantitative stressors” and “situational constraints” on the one hand and most of the JATS dimensions on the other hand ( $r = .295 - r = .503$ ). This shows

that different aspects of the working environment – colleagues, supervisors, coworkers, achievement demands, thirds, and responsibility and uncontrollable aspects of work as described with the JATS - may be associated with perceived stress or constraints when feeling strongly exposed to them. Other dimensions of the KFZA (job variety, holistic job, information and participation, benefits and development possibilities, cooperation) however are not strongly related with most of the JATS dimensions. This shows that the two scales (KFZA and JATS) reflect different aspects of work and give complementary rather than redundant information.

Highest amount of job demands according to the JATS were reported for the dimension responsibility and uncontrollable changes (23% of the participants agreed strongly), whereas exposition towards coworkers for whom one is responsible was a less frequent job demand (0.8% agreed strongly).



**Table 2**

Spearman correlations of the subscales of the Short Questionnaire for Work Analysis (KFZA) and the Job Anxiety Trigger Scale (JATS) ( $N = 124$ )

<b>Job Anxiety Trigger Scale (JATS)</b>	<b>Exposure towards colleagues</b>	<b>Exposure towards supervisor</b>	<b>Exposure towards and threat by coworkers</b>	<b>Controlling and demands for achieving</b>	<b>Exposure towards thirds</b>	<b>Exposure towards environmental threats</b>	<b>Responsibility and uncontrollability</b>	<b>Mean<sup>1</sup></b>	<b>Standard deviation<sup>1</sup></b>	<b>Percentage of sample individuals reporting high agreement (mean &gt; 2.5)</b>	<b>Cronbach's alpha</b>
<b>Short Questionnaire for Job Analysis (KFZA)</b>											
Job control	-.139	-.321**	.066	-.310**	-.002	-.229*	-.055	3.34	1.09	47.6%	.755
Job variety	.036	-.036	.171	-.022	.163	.057	.232**	3.99	.089	72.8%	.729
Holistic job	-.027	.000	.174	-.076	-.037	.005	.223*	3.68	1.16	52.4%	.583
Social support	-.232*	-.346**	-.235**	-.367**	-.141	-.006	.042	3.92	0.98	70.7%	.782
Cooperation	.120	-.022	.014	-.078	.022	.059	.313**	3.74	0.91	62.4%	.597
Qualitative stressors	.297**	.408**	.300**	.488**	.313**	.295**	.351**	2.44	1.20	15.3%	.624
Quantitative stressors	.349**	.394**	.341**	.385**	.364**	.013	.250**	3.22	1.28	36.8%	.787
Situational constraints (interruptions and insufficient material)	.503**	.500**	.306**	.500**	.403**	.169	.353**	2.45	1.13	17.7%	.523
Environmental stressors (physical working conditions)	.106	.324**	.158	.227	.144	.546**	.288**	2.54	1.21	17.7%	.505
Information and participation	-.113	-.243**	-.039	-.172	.017	.105	.180*	3.52	1.09	44.4%	.717
Benefits and possibilities for development	.090	-.095	.098	.145	.237**	.110	.237**	2.83	1.27	29.0%	.734

Percentage of sample individuals reporting high demands / exposure (mean>2.5)	13.5%	11.4%	0.8%	4.9%	11.4%	2.4%	23.0%
Mean	1.54	1.50	0.59	0.96	1.12	0.73	1.72
Standard deviation	0.82	0.98	0.69	0.72	1.09	0.69	0.94
Cronbach's alpha	.741	.785	.719	.756	.774	.716	.779

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*Note:* <sup>1</sup>Means and standard deviation for the KFZA dimensions have also been reported in [13]



*Relationships between workplace perception, work ability, and work anxiety*

Table 3 shows the correlations between workplace characteristics (KFZA, JATS) on the one hand and sick leave duration, physicians' work ability judgment and the patients' self-reported work-anxiety degree and mental work ability on the other hand.



**Table 3**

Spearman correlation of Short Questionnaire for Work Analysis (KFZA) and the Job Anxiety Trigger Scale (JATS) with socio-medical data ( $N = 125$ )

Short Questionnaire for Job Analysis (KFZA) and Job Anxiety Trigger Scale (JATS)	Sick leave duration in the past 12 months	Sick leave duration before rehabilitation	Work-Anxiety <sup>3</sup>	Work-Anxiety (controlled for self-reported mental work ability) <sup>1</sup>	Self-reported mental work ability (Work Ability Index)	Self-reported mental work ability (controlled for Work-Anxiety) <sup>2</sup>	Physicians suggestion for stepwise reintegration at work	Physicians suggestion for work adjustment means	Physicians prognosis for daily working hours in last profession	Physicians prognosis of daily working hours in any workplace	Impairment in mental work ability (certified by physician)	Impairment in physical work ability (certified by physician)
<b>KFZA</b>												
Job control	-.186*	-.148	-.309**	-.289**	.230*	.109	-.095	-.129	.038	-.112	-.097	.178
Job variety	.016	.065	-.128	-.158	.046	-.039	-.070	-.126	.075	-.142	.245*	.193
Holistic job	-.137	-.92	-.204*	-.167	.189*	.128	-.040	-.087	-.070	-.094	-.035	.130
Social support	-.212*	-.211*	-.397**	-.356**	.300**	.198	-.063	-.159	-.127	-.214	.124*	.195
Cooperation	-.128	-.054	-.151	-.125	.115	.044	-.091	-.079	-.082	-.159	.115	.121
Qualitative stressors	.130	.114	.326**	.241*	-.338**	-.244**	-.051	.026	-.091	-.047	.120	-.111
Quantitative stressors	.192*	.189*	.426**	.432**	-.292**	-.136	.197	.234*	-.118	.055	-.128	-.033
Situational constraints (interruptions)	.249**	.253**	.377**	.345**	-.272**	-.154	.185	.263**	-.088	.026	-.070	-.006

and insufficient material)												
Environmental stressors (physical working conditions)	.058	.172	.119	.117	-.156	-.110	.083	-.031	.050	.067	.103	-.190
Information and participation	-.083	.034	-.346**	-.283**	.358**	.262**	-.118	-.053	-.090	.004	.148	.147
Benefits and possibilities for development	-.113	-.116	-.293**	-.258**	.190*	.088	-.056	-.119	.224*	-.108	.139	.297*
<b>JATS</b>												
Exposure towards colleagues	.122	.067	.271**	.197*	-.294**	-.235*	.066	.123	.015	.131	.042	.053
Exposure towards supervisor	.116	.073	.298**	.255**	-.260**	-.176	.122	.124	.063	.188	.039	.009
Exposure towards and threat by coworkers	.025	.025	.062	.077	-.092	-.044	.060	-.021	.022	.073	-.104	-.077
Controlling and demands for achieving	.121	.086	.178*	.142	-.315**	-.289**	.183	.115	-.135	-.016	.139	-.102
Exposure towards thirds	.027	.082	.173	.144	-.166	-.121	.076	.083	-.147	-.143	.079	-.134

Exposure towards environmental threats	.056	.221*	-.083	-.067	.014	-.044	.002	-.023	-.078	.018	.277*	-.007
Responsibility and uncontrollable changes	.087	.165	.045	.107	.015	.025	.002	.136	-.196	.024	.177	.198

Note: <sup>1</sup>Partial correlation mental work ability and workplace perception controlled for work-anxiety, <sup>2</sup>Partial correlation mental work ability and workplace perception controlled for work-anxiety. <sup>3</sup>Correlations between work-anxiety and KFZA dimensions are cited from [13]



Work-anxiety and work ability perception were both to a similar degree correlated with several KFZA work characteristics (job control, social support, qualitative and quantitative stressors, situational constraints, information and participation). Concerning the JATS, work-anxiety and work ability were only correlated with degree of social exposure (towards colleagues and supervisors) and controlling and achievement demands, but not with environmental threats, or coworkers, or thirds, or responsibility and uncontrollable changes. As work-anxiety is known to be associated with a rather negative view of the workplace [11], and may influence the relation between subjective work ability and work perception, additional partial correlations have been calculated controlling for work-anxiety. In result the strength of correlations between workplace characteristics and subjective work ability perception decreased.

“Objective” socio-medical markers, i.e. sick leave duration and physicians’ judgments of work ability and impairment, were only correlated significantly and consistently with few KFZA work characteristics, i.e. low social support, quantitative stressors and situational constraints. They were rather independent from work characteristics as described with the JATS.

## **Discussion**

This study is the first to examine the relationship between patient-reported workplace characteristics on the one hand and work ability measures and work-anxiety on the other hand. Understanding this relationship is important for the physicians’ judgment on work ability, as mostly workplace characteristics must be explored from the patient.

Firstly, it has been shown that the two work description instruments (KFZA, JATS) describe different aspects of work, and that they are to a different degree related with work-anxiety

and subjective work ability. Most KFZA dimensions are correlated with work-anxiety, but only few dimensions of the JATS are correlated with work-anxiety. This leads to the assumption that the KFZA reflects more subjective feeling at work (e.g. over-taxation), which may be associated with work-anxiety, whereas the JATS reflects more descriptive work characteristics (degree of exposition with certain persons or demands), which can be reported independent from work-anxiety. The contents of the two instruments are different. These contents may be asked complementarily in workplace exploration. In order to explore workplace characteristics rather objectively, it must be suggested to ask for descriptive work characteristics (rather than subjective aspects like what the person thinks about his/her work conditions or how s/he feels with them).

Secondly, patients with higher work-anxiety or low perceived work ability see their workplace in a systematically more problematic light. This is similar to findings from working people compared with psychosomatic patients with and without work-anxiety diagnosis [11]. However, when controlled for work-anxiety, subjective work ability remained significantly related only with social workplace characteristics and with work achievement demands, but appeared rather independent from situational constraints, task characteristics, or responsibilities and changes at work. Thus, in the exploration and judgment of work ability it must be considered that work-anxiety may bias the subjective workplace and work ability perception into a negative direction.

Thirdly, the relative independence of socio-medical markers (physicians' judgment, sick leave duration) from work characteristics may on the one hand be due to methodology: The usage of different and independent sources (patients' perception, physician judgment, sick leave duration) may produce lower correlations than data from single source investigations, avoiding problems of common method variance [29]. On the other hand it shows that work

ability is a question of person-job-fit [30] which must be judged and handled in each individual case. Thus one can hardly say that (certain degrees of) specific work characteristics are systematically associated with work disability or need for work adjustment. In clinical practice, it must be cleared in each single case whether the patient's report reflects the work situation objectively-descriptively, or whether the patient's report is influenced by work-anxiety. Furthermore, although mental health is an important component in work ability judgment [31], the physicians' work ability decision is based on a conglomerate of health indicators, including a wide variety of somatic aspects which could not be controlled for in this study.

#### *Limitations and future research implications*

Generalizability of the results may be limited as we only investigated somatic patients in this present study. It is also an open question whether patients with higher work-anxiety do have more difficult or other workplaces than others. There are hints that persons with mental disorders are more likely than healthy persons to work in jobs which do not match their abilities or work in low-skilled jobs [5]. Studies are needed which investigate the persons' workplaces and work demands with independent observers.

Future research needs to evaluate courses of work perception in relation to work ability and work-anxiety (longitudinal research with follow-up). It has been found empirically that long-term-sickness is associated with perceived problematic psychosocial working conditions [32]. Beside symptom reduction and work-coping, a cognitive reframing of negative work perception may also be a topic in intervention studies aiming at return-to-work.

### *Conclusion*

In work ability assessment, the patients' description of workplace characteristics and their subjective mental work ability must be expected to be influenced by the degree of work-anxiety. Considering potentially biased patient's view on their work characteristics in the socio-medical exploration, the patient must explicitly be explored concerning both: workplace characteristics and work-anxiety. Detecting work-anxiety is important for initiating early (cognitive-behavioral [33] and work-directed [34]) treatment in order to prevent long-term sick leaves [9].

### **What is new in this paper**

As socio-medical judgment must be based on an exploration of workplace demands respective workplace characteristics, "objective" workplace descriptions are needed.

Work-anxiety may bias workplace description. For detecting potentially biased patient's workplace description, the patient must be explored concerning work-anxiety.

In clinical exploration workplace characteristics must be exactly explored on a descriptive level and must be explicitly distinguished from work-anxiety.

**Contributors**

The author carried out the investigation together with a clinical assistant. The author initiated the research question, designed the study, analysed the data and wrote the manuscript.

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**Competing interests**

None

**Ethics approval**

The research project was approved by the ethics committee of the University of Potsdam and the German Federal Pension Fund and by the internal review board of the German Federal Pension Fund Agency (concerning were patient information and voluntary participation, written informed consent, data security).

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