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Abstract

Purpose: The aims were to describe and analyze how people with experience of long term sick leave perceive that factors in their work environment support or interfere with work performance, satisfaction, and well-being.

Method: The 53 participants were interviewed with the Work Environment Impact Scale (WEIS). The WEIS ratings and belonging notes were analyzed by descriptive statistics and qualitative analysis respectively. Differences in WEIS ratings between; women and men; participants with somatic and mental diseases; and participants working and on full-time sick leave were tested.

Results: The most supportive factors concerned social interactions at work, and the value and meaning of work. The factors perceived as most interfering concerned work demands and rewards. The social relations at work were perceived as more supportive by the working group than by those on full-time sick leave. The participants with somatic diseases perceived physical work factors as more interfering than did participants with mental diseases, who in turn perceived the value and meaning of work as more interfering.

Conclusion: Knowledge about the interaction between the worker and the work environment could reveal useful information about the complex phenomenon of reducing sick leave. The WEIS seems useful in providing information about how alterations and accommodations in the work environment could support individual workers.

Keywords: psychosocial, assessment, WEIS, well-being

1. Introduction

Although long term sickness absence is costly to society, the impact of working conditions on sickness absence is still uncertain [21]. The increased mismatch between the demands at work and the workability of the workforce could be one reason for high sick–leave rates [12]. More knowledge about factors causing long term sick leave, and about what facilitates return to work after long-term sick leave is needed [27]. In this, valid assessment tools are essential [22]. The identification of efficacious intervention strategies and the implementation of useful findings into practice is the ultimate goal [31]. Assessments based on theoretical models have the advantage of creating conditions that are conducive to valid interpretations of assessment results and that they yield intervention strategies [17].

The most well–known models in the field of how work characteristics influence employee health and well-being are the job demand-control-support model (JDCS) [14] and the effort reward imbalance model (ERI) [30]. In brief, the JDCS model claims that job strain and ill-health occur when high demands at work are combined with low control and low social support [14]. The ERI model claims that an imbalance between perceived efforts invested by the worker and perceived rewards in the form of pay, status and advancement opportunities at work is related to ill health [30]. Polanyi and Tompa [25] call attention to potential work factors influencing worker health which go beyond the content of the JDCS and ERI models. They highlight the importance of also considering a) the person's perceptions of interactions with clients, customers or the like; b) the person's beliefs about the meaningfulness of his/her work; c) the person's perception of characteristics of work arrangements; and d) the person's perception of the fit between him/her and the specific type of work.

Apart from sleeping, paid work is the activity that occupies most of our time in adult life [10]. Our experience when engaging in activities is closely connected to our quality of life, which means our experience of work has a great influence on our overall quality of life [16,18] and is likely to have direct and indirect health consequences [25]. We bring, want and expect different things from work, and similar work characteristics affect different people in different ways [13,25], which make it difficult to assess health implications just through work characteristics [25]. To focus on the individual's subjective perception of work-related factors gives an understanding of the individual's experience [7,28,29] and supplements more objective assessments [28,29]. Since work experiences appear in the interaction between the person and the work characteristics, models of work and health need to consider the fit between each unique person and his/her work characteristics [25].

3. Aim

The aims of the present study were to describe and analyze how people who have experience of long-term sick leave perceive that social and physical factors in their work environment support or interfere with their work performance, satisfaction, and well-being.

4. Methods

Study Population

The study population was derived from the Swedish Social Insurance Board register. It included all employed workers aged between 20 and 60 in a Swedish municipality with about 130,000 habitants, who on one specific day in 2004 were on a sick leave period from 60 to 89 days long to an extent of at least 50% of full-time work. In Sweden the Social Insurance

Board classifies sick-leave periods longer than 60 days as long-term sick-leave. People with cancer (n=3) or pregnancy-related diagnoses (n=7) and people with protected personal information (n=1) or those who did not have a phone-number (n=6) were excluded. In total, 130 people were asked by mail to participate in the study. Information about their addresses was obtained from the Swedish taxation authorities. Twenty-two of the people declined participation in the study by means of a reply letter, and 43 others declined when they were called by telephone. Twelve people did not answer by mail and could not be reached by telephone.

[Insert table 1 about here]

In total 53 people (41%), 34 women and 19 men, agreed to participate in the study. Their mean age was 43 years, with a range from 20 to 60 years. The most common professions represented among the participants were service workers and shop sales workers (n=12), and technicians and associate professionals (n=11) (Table 1). The most common diagnoses were diseases of the musculoskeletal system and connective tissue (n=27), and mental, behavioural disorders (n=14) (Table 2).

[Insert table 2 about here]

The Work Environment Impact Scale

The Work Environment Impact Scale [24] is a semi-structured interview designed to identify how clients perceive their work environment. The interview yields information about the client's perceptions of how factors in the work environment support or interfere with the client's work performance, satisfaction, and well-being. Thus, the WEIS does not objectively

assess the work environment; it assesses the client's subjective perception of it. The theoretical basis of the WEIS is the Model of Human Occupation (MOHO) [16,18], which claims that the interaction between the person and the environment strongly influences occupational behaviour. The interaction is dependent upon the social and physical characteristics of the work environment and on each person's values, interests, personal causation, habits, roles and performance capacities. The WEIS contains 17 items (Table 3) which are organized around the physical and the social work environment. The items are rated on a four-point rating scale after completing the interview. The rating scale has four values indicating how each item relates to the factors of work performance, satisfaction and well-being. A value of '1' implies that the item strongly interferes, '2' implies that the item interferes, '3' implies that the item supports, and '4' implies that the item strongly supports these factors. Besides the rating, a written note explaining the participant's perception of the actual item and the reason why the actual rating has been chosen could be added to the rating form. The notes could consist of illuminating citations from the WEIS interview or a summary of the interviewee's perceptions of the actual item, made by the interviewer [24].

[Insert table 3 about here]

The WEIS has been tested for validity [3,4,15] and reliability [4]. In 1997 the WEIS was translated and adapted to Swedish culture, and this present study is based on the second version of the Swedish WEIS [5].

The study

The present study is part of a research project in which various types of written and verbal information concerning work and life situations were collected from the study participants.

The information was collected four times over a period of two years. The present study concerns data collected from telephone interviews at baseline, then the participants were interviewed with the Work Environment Impact Scale (WEIS). The first author interviewed 25, while two occupational therapists who had a sound knowledge of MOHO and WEIS interviewed 15 and 13 of the study participants respectively.

The four-point rating scale and written notes were used for each of the 17 WEIS items. Not all the WEIS items are applicable to all participants. For example, when a person does not have a boss and/or co-workers, items 6 and/or 7 are not applicable due to the participant's situation, thus the number of rated participants varies for the WEIS items. The WEIS interview takes 25 minutes on average and the rating afterwards takes about 15 minutes to complete.

On the inclusion day, 45 of the study participants were on full-time sick leave, and eight were on part-time sick leave. When the WEIS interview was conducted at baseline, two to three months after the inclusion day, 14 participants were on full-time sick leave, 17 participants were on part-time sick leave, and 22 participants were working full time.

Ethics

Approval for the study was given from the ethical research committee at the Faculty of Health Sciences at Linköping University, Sweden.

Analysis

The WEIS ratings together with the written notes constituted the basis for the analysis. Mean values for each item and how often the rating had been used were identified. The written notes of the items were analyzed with a manifest qualitative content analysis approach inspired by Granheim and Lundman [8] which involves a descriptive analysis of the content. The items as defined in the WEIS manual constituted different content areas and provided direction for the analysis of the notes. The first author read through the notes on each item several times to obtain a sense of what each item notes concerned. Thereafter, meaning units in the notes were identified for each item. The identified meaning units in the notes depended upon the content area of the specific item analyzed, e.g. if some of the text in the notes described something not related to the particular item, it was not classified as a meaning unit. Then the meaning units which had the same meaning were organized into codes (Table 4). The number of meaning units representing each code was counted.

[Insert table 4 about here]

The Mann-Whitney *U* test was used to test statistically significant differences in the WEIS ratings between a) women and men, b) participants with somatic and mental diseases and c) those who were working and those who were on full-time sick leave when participating in the WEIS interview. Concerning the classification of somatic and mental diseases, the participants with diseases related to mental and behavioural disorders were classified as having mental diseases and the other participants were classified as having somatic diseases.

The rejection limit of the null hypothesis for the statistical tests was set to α=0.05. All tests were two-sided. The data were analyzed using the SPSS, version 14.0.

5. Results

The three WEIS items which were rated as most supportive of work performance, satisfaction and well-being for most of the 53 participants were item 10 "Interaction with others", item 17 "Meaning of work", and item 6 "Work group membership". The three WEIS items which were rated as most interfering with work performance, satisfaction and well-being for most of the participants were item 2 "Task demands", item 11 "Rewards", and item 1 "Time demands" (Table 5).

[Insert table 5 about here]

Supportive factors in the work environment

The item "Interaction with others" concerns the perception of interactions with people at work who are not work colleagues, such as customers, pupils and clients. For 43 (81%) of the participants this item was rated as being supportive of their work performance, satisfaction and well-being. There were those who indicated the interaction with others as one of the best things about their work. For example, participant 31 said; *"The contact with customers is the best thing about the work".* There were those who said that the interaction worked well and/or found that the interaction was stimulating. For example, this item concluded as follows for participant 29; *"The interaction with the patients works very well and gives great satisfaction at work".*

There were 41 (77%) participants who found "Meaning of work", which concerns the individual's perception of the meaning of what is done at his or her work, as supportive of their work performance, satisfaction and well-being. Among them there were those who

perceived that the work per se was important, and those who found value in what was done at their work. For example participant 47 said; *"It's valuable to help people"*. Some stated that they did useful things at work, which were valued by others. For example participant 42 said: *"My contribution can help the patients to come home and have a good quality of life"*. Some participants stated that the work was important for them selves. There were also participants who said that they were proud of their work or proud of being regarded as competent by others at work.

The perception of social involvement with co-workers is conceptualized in the item "Work group membership". Thirty-nine (74%) of the participants perceived that this work-related factor contributed to their work performance satisfaction and well-being. There were those who perceived that the social fellowship was good and positive. Some participants stated that the social relationship with co-workers was an important part of making the work pleasant. For example participant 45 said: *"The workmates form 80% of the work and are that which makes that you get on well".* There were also those who said that they got positive support from their co-workers. For example participant 42 said; *"I have incredible support from my workmates"*. Some participants said that they on occasion met their co-workers outside work and enjoyed it.

Interfering factors in the work environment

"Task demands" concerns the perception of physical, cognitive and emotional work task demands, and this item was rated as interfering with work performance satisfaction and well-being for 38 (72%) of the participants. There were participants who perceived their work task demands as being too physically challenging and some reported that they suffered from pain

after performing work tasks. For example participant 10 said: *"The work tasks involve repeatedly jerking the back, resulting in pain and tiredness in the back which escalates during the afternoon".* Some participants described the work tasks as too cognitively challenging. For example was the item concluded as following for participant 17; *"Periodic frustration and often an arduous work situation due to constant development and exorbitant expectations of having specific knowledge"*. Some participants found their work tasks to be too emotionally challenging. This is exemplified by a quote from participant 11: *"When the queue (in front of the cash-desk) gets long I feel badgered by all sighs from the customers".* There were also participants who perceived that the work tasks did not provide sufficient cognitive challenges.

The item "Rewards" concerns the perception of received rewards for personal effort in the form of job security, recognition, promotion and compensations in salary or other benefits. For 32 (60%) of the participants this item was rated as interfering with their work performance, satisfaction and well-being. There were participants who found their employment insecure and were afraid of losing their jobs. Some participants stated that they lacked rewards in the form of encouragement from their employers. For example, participant 25 said: *"Almost no appreciation is shown by the employer"*. Some perceived that they had rewards at work but wished that the rewards took a different form. This is exemplified by the note from participant 35; *"They get a common bonus but he wishes that the bonus was more individual or work-team related".* There were participants who had had rewards before but the rewards had been taken away, which was perceived negatively. Some participants said that they found their salary too low. For example participant 7 said; *"The job is so low paid in contrast to the responsibility you have; it is typical woman's work".*

The item "Time demands" concerns the perception of time in relation to what the person is expected to accomplish at work. For 31 (58%) of the participants this item was rated as interfering with their work performance satisfaction and well-being. There were participants who found their work stressful because they perceived that there was too much to do in too little time. For example participant 50 said: *"The job is very stressful, which means you are not satisfied with what you have done. I should need eight arms instead of two"*. There were participants who stated that the lack of time for accomplishing work-tasks had a negative impact on the quality of the work and/or that it resulted in a feeling of being inadequate. Others perceived that lack of time for accomplishing work tasks resulted in complaints from the employer or customers. Other negative factors concerning time demands were the perception of expectations from the employer of working overtime and expectations of taking over the tasks of co-workers when they were absent. There were also participants who sometimes perceived that they had not enough to do at work who then perceived the work as tedious.

Identified item codes

The codes which were identified for each WEIS item are presented in Table 6. The items with codes consisting of the greatest number of meaning units indicating support for work performance, well-being, and satisfaction were item 6 "Work group membership" (n=55), item 10 "Interaction with others" (n=47), item 14 "Social atmosphere" (n=47) and item 17 "Meaning of work" (n=47). Those items with codes representing the greatest number of meaning units indicating interference with work performance, well-being, and satisfaction were item 2 "Task demands" (n=51); item 11 "Rewards" (n=49) and item 1 "Time demands" (n=46). The number of codes within each WEIS item varied between 5 to 21 codes, whereas

item 9 “Work role style” had the fewest codes (n=5) and item 7 “Supervisor interaction” had the most codes (n=21) (Table 6).

[Insert table 6 about here]

Differences in WEIS ratings between groups

There were no statistically significant differences in the WEIS ratings between women and men (Table 7). Two WEIS items showed a statistically significant difference between participants who were working and those who were on full-time sick leave when the interview took place, namely item 6 “Work group membership”, and item 14 “Social atmosphere” (Table 7). These two items were perceived as more supportive of work performance satisfaction and well-being for the participants who were working than for the participants who were on full-time sick leave.

[Insert table 7 about here]

When comparing the WEIS ratings between the group with somatic diseases and the group with mental diseases there were statistically significant differences between the groups in five items, namely item 3 ”Appeal of work tasks”, 4 “Work schedule”, 12 “Sensory qualities”, 15 “Properties of objects” and item 17 “Meaning of work” (Table 7). Of these, items 4, 12 and 15 were perceived as more supportive of work performance satisfaction and well-being for the participants with mental diseases than for the participants with somatic diseases. On the other hand, items 3 and 17 were perceived as more interfering with work performance satisfaction and well-being for the participants with mental diseases than for the participants with somatic diseases.

6. Discussion

This study aimed to illuminate how people with experience of long term sick leave perceive their social and physical work environment. The findings offer some understanding of how the interaction between the worker and the work environment can impact on the workers work performance, well-being and satisfaction.

Findings

The WEIS items which were perceived as most supportive of work performance, well-being, and satisfaction at work were item 6 “Work group membership”, item 10 “Interaction with others” and item 17 “Meaning of work”. These three items and item 14 “Social atmosphere”, which also reflect perceptions of social relationships at work, had the most number of supportive meaning units represented in the codes. Items 6, 10 and 14 all concern perceptions of different social relationships at work, and these results suggest that positive perceptions of social interactions at work could be a source of well-being, which is in line with the results of [1,9,20,25] who stress the importance of the quality of social interactions for well-being and/or health at work. Lindin Arwedson and co-workers [20] found that a positive social work climate brings enjoyment to work and is central for a healthy workplace. Polanyi and Tompa [25] showed that social interactions at work are of central importance for work-related health, and that socialization and friendship with co-workers plays an important role. Being accepted, respected and receiving support from co-workers was found by Gunnarsdottir and Björnsdottir [9] to be important for the perception of well-being. Social support has also been found to be a prerequisite for health promotion at work [1]. Two previous studies [20,25] have also pointed out the importance of having fun and time for

laughing at work as important health factors. This was also found in this present study in relation to item 14 “Social atmosphere”, in which participants who reported that they had fun together mentioned it as a supportive factor for work performance, satisfaction, and well-being.

Item 6 “Work group membership” and item 14 “Social atmosphere” also showed a significant difference in ratings between those who were working and those who were not. That social relations with co-workers are important for returning to work is in line with the results of a study by Post and co workers [26] who found the presence of co-worker support as predictive for return to work after sick leave. Weak social support has also been found to be a predictor for long-term sick leave [19].

Item 17 in the WEIS which concerns the worker’s perception of the underlying meaning of the work accomplished was also found to be supportive of work performance, satisfaction, and well-being. Polanyi and Tompa [25] stress that workers’ perception of the meaning of what one is doing at work and the feeling that one is successfully achieving the purpose of work is significant for the quality of the work experience, and deserves a central place in explorations of the impacts of work on health.

Those WEIS items in the present study which were perceived as most interfering with work performance, well-being, and satisfaction at work were item 1 “Time demands”, item 2 “Task demands” and item 11 “Rewards”. Both item 1 and item 2 refer to the demands the worker perceives are made on him or her. The code representing most meaning units for “Time demands” was “Not having sufficient time to do the work tasks”, and for “Task demands” it was “Work task demands are too physically challenging”. Similar work

demands are also considered in the JDCS model [14] in which high work demands have been found to be a threat to health [2,23,33] and constitut a risk for low enthusiasm and low satisfaction about work [13]. Further, Lund and co-workers [21] found that heavy work and uncomfortable physical exposure is related to increased sickness absence. In the present study there were participants who found that physical work demands interfered with their work performance, satisfaction, and well-being, represented in item 2 “Task demands” by the codes “Work task demands are too physically challenging” and “Performing work tasks results in suffering from pain”.

Item 11 “Rewards” concerns how the worker perceives received rewards for personal efforts. In the present study this item was rated as one of the most interfering with work performance, satisfaction, and well-being. Components of the ERI model [30] have similarities with this WEIS item, and in studies using the ERI model an imbalance in personal efforts and received rewards has been found to be related to subsequent sickness absence [11] and various types of ill health [32]. Lindin Arwedson and co-workers [20] also state that receiving benefits for efforts is important for a worker’s health.

The significant differences in ratings between the participants with mental diseases and those with somatic symptoms or diseases could be explained by the underlying diagnoses. The items which the clients with mental diseases had lower ratings on were item 3 “Appeal of work tasks” and item 17 “Meaning of work”, which both assess the perception of value of the work and are related to psychological and social factors. In comparison, in the more physically related items; item 4 “Work schedule”, item 12 “Sensory qualities” and item 15 Properties of objects”, the participants with somatic diseases had lower ratings.

The fact that there were no significant differences in the WEIS ratings between men and women indicates that differences in perceptions of the work environment may be more related to our values, interests, thoughts about our capacity and what we expect from work than to sex per se. Similar work characteristics affect different workers in different ways, and health implications could not be assessed from work characteristics. This has also been stated by Polanyi & Tompa [25] who claim that different workers want different things from work, and therefore find different types of task, levels of job demand, and characteristics of working environments desirable or acceptable.

Methodological considerations

There are some methodological considerations of the study which should be addressed. The aim was to identify and describe work environment perceptions. The use of WEIS as a data collection method implied a structured method of eliciting information to identify elements in the work environment which impacted the participant's work performance, satisfaction and well-being. The WEIS was considered useful since it reflected each person's perceptions of his or her environment. Factors which can be related to the demand-control-support model [14] and the effort-reward-imbalance model [30] are considered in the WEIS. However, other factors such as the person's perceptions of interactions with clients and customers, the person's beliefs about the meaningfulness of his/her work, the person's perception of characteristics of work arrangements, and the person's perception of the fit between him or her and the specific work, which have been pointed out by Polanyi and Tompa [25] as also important for work-related health are also considered in the WEIS.

The most common way to accomplish the WEIS is face-to-face interviewing. In this study, telephone interviews were used for practical and economic reasons since several of the participants were working during the day and/or had difficulty in travelling, and also did not receive any compensation for participation. Our experience of doing the WEIS interviews by telephone was positive since it seemed that the participants responded honestly and were willing to share their perceptions by telephone. In fact, Young and Murphy [35] found that there were very few differences in the responses when comparing face-to face interviewing and telephone interviewing. The main difference between the data collection methods was that face-to-face interviewing took a longer time since it included more social niceties.

The participants in the study included both men and women, with a wide variation in ages, professions, diagnoses and length of sick leave, and this might strengthen the credibility of the study since it may have widened the variations in the perceptions of the participants. However, the rather small and non-homogenous participant group makes generalizing difficult, and caution should be regarded in generalizing the results to other populations. The trustworthiness of the study has also been considered by using quotations to illustrate the perceptions of the participants and by presenting all the identified codes of the items in a table (Table 6). During the whole analyzing process a dialogue was held between the first and third author about the classification of the content of the item notes into codes.

Conclusion

Those items which the participants perceived as most supportive of work performance, well-being and satisfaction concerned different social interactions at work and the perceived meaning of the work, while the items found most interfering concerned different work

demands and the rewards received for the work. For improvements in work conditions, employee involvement is needed in identifying areas relevant for work-related health [13], and the match between workers and given working conditions needs to be considered rather than just the conditions themselves [25]. In this the WEIS could be a useful assessment tool since a fundamental principle of the WEIS is that individuals are most satisfied and productive when there is a match between the environment and the needs and skills of the worker [24]. Moreover, the qualitative information obtained by the WEIS provides important cues about how alterations and accommodations in the work environment can be made to support each unique worker. This study was descriptive and says nothing about causes and effects. Further studies are needed to explore how the perceptions of work environment in the form of the match between the worker and the work relate to health and satisfaction. It would also be of interest to investigate how the perceptions of workers on sick-leave differ from similarly situated workers who have never been on sick-leave. Gaining more knowledge in this area could reveal useful keys to the complex phenomenon of reducing sick leave.

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Table 1. Distribution of occupations of the participants.

	Participants (n)
Legislators, senior officials and managers	4
Professionals	7
Technicians and associate professionals	11
Clerks	7
Service workers and shop sales workers	13
Skilled agricultural and fishery workers	1
Craft and related trades workers	2
Plant and machine operators and assemblers	6
Elementary occupations	2

The occupations are recorded according to International Classification of Occupation (ISCO, 88) [6].

Table 2. Distribution of diagnoses of the participants.

Diagnosis	Participants (n)
Mental, behavioural disorders (F)	14
Diseases of the nervous system (G)	1
Diseases of the eye and adnexa (H)	1
Diseases of the circulatory system (I)	3
Diseases of the respiratory system (J)	1
Diseases of the digestive system (K)	1
Diseases of the musculoskeletal system and connective tissue (M)	25
Symptoms, signs and abnormal clinical and laboratory findings (R)	1
Injury, poisoning and certain other consequences of external causes (S and T)	6

The diagnoses are recorded according to International Classification of Diseases, ICD 10 [34].

Table 3. Items in Work Environment Impact Scale (WEIS)

WEIS item
1. Time demands
2. Task demands
3. Appeal of work tasks
4. Work schedule
5. Co-worker interaction
6. Work group membership
7. Supervisor interaction
8. Work role standards
9. Work role style
10. Interaction with others
11. Rewards
12. Sensory qualities
13. Physical arrangement
14. Social atmosphere
15. Properties of objects
16. Physical amenities
17. Meaning of work

Table 4. Examples of analysis from the item notes to meaning units and to codes

Item	**Item note**	**Meaning unit**	**Code**
Meaning of work	It's an important job and she is proud about being regarded as competent by the others. (Participant 18)	It's an important job	The job is an important job
		…she is proud about being regarded as competent by the others.	Proud about being regarded as competent
Task demands	Physical "heavy work" leads to physical tiredness and increasing/growing pain during the work day. Also, "excessive responsibility" is often laid on her. (Participant 44)	Physical "heavy work" leads to physical tiredness.	Work task demands are too physically challenging
		Increasing/growing pain during the work day.	Performing the work tasks results in suffering from pain
		Often, "excessive responsibility" is laid on her.	Work task demands are too emotionally challenging

Table 5. Mean and median values and the number of times each rating was used for the WEIS items.

				Interferes		Supports	
WEIS item	n	mean	median	rating 1 (n)	rating 2 (n)	rating 3 (n)	rating 4 (n)
1. Time demands	53	2.4	2	11	20	12	10
2. Task demands	53	2.2	2	13	25	9	6
3. Appeal of work tasks	53	3.0	3	3	12	18	20
4. Work schedule	53	2.6	2	10	17	11	15
5. Co-worker interaction	53	3.0	3	5	12	12	24
6. Work group membership	50	3.1	3	5	5	18	22
7. Supervisor interaction	49	2.5	3	17	6	12	14
8. Work role standards	53	2.6	2	7	20	13	13
9. Work role style	53	2.9	3	6	10	22	15
10. Interaction with others	48	3.5	4	1	4	11	32
11. Rewards	51	2.2	2	13	19	14	5
12. Sensory qualities	53	2.5	2	9	22	8	14
13. Physical arrangement	52	2.9	3	5	14	16	17
14. Social atmosphere	51	3.1	4	7	7	10	27
15. Properties of objects	53	3.0	3	6	12	12	23
16. Physical amenities	52	3.0	3	6	7	19	20
17. Meaning of work	53	3.3	4	3	9	12	29

Table 6 Codes for each WEIS item and number of meaning units which represent the code.

1. Time demands	2. Task demands	3. Appeal of work tasks
• Having sufficient time to do the work tasks (n=18) • Occasional time pressure is alright (n=4) • Likes high time pressure challenges (n=1) • Ability to leave work tasks (n=1) --- • Not having enough time to do the work tasks (n=26) • Lack of time impacts negatively on quality of the work (n=6) • Expectations from the employer of working overtime (n=4) • Lack of time results in a feeling of being inadequate (n=3) • Lack of time results in complaints from the employer or customers (n=3) • Tedious not having enough work to do (n=3) • Expectations of taking over co-workers work-tasks when they are absent (n=1)	• Work task demands are in accordance with the participant's unique abilities (n=10) --- • Work task demands are too physically challenging (n=24) • Work task demands are too emotionally challenging (n=11) • Work task demands are too cognitively challenging (n=6) • Performing work tasks results in suffering from pain (n=6) • Work task demands do not provide sufficient cognitive challenge (n=4)	• The work is stimulating (n=15) • Likes the profession (n=8) • Likes the work tasks (n=8) • Feels that the job suits him/her (n=6) • Proud of their work (n=3) • The work tasks are important (n=1) • High status work tasks (n=1) --- • Not stimulating work tasks (n=9) • Took the job because it was available; not work they would have normally chosen (n=3) • Low status work (n=2) • Low-paid work (n=2) • Aversion to doing work tasks (n=1)
4. Work schedule	**5. Co-worker interaction**	**6. Work group membership**
• Content with work schedule (n=11) • Can influence the work schedule (n=13) • Working hours do not hinder doing other things (n=6) • Reasonable breaks (n=5) • Part-time work implies possibilities for combining work with other obligations (n=4) --- • Working hours impact negatively on responsibilities outside work (n=17). • Lack of flexibility in work schedule (n=10) • Work schedule is poorly planned (n=6) • Few breaks (n=4) • Working overtime is overwhelming (n=3). • Work schedule leads to tiredness (n=2) • Work schedule leads to pain (n=1) • Work schedule leads to poor sleep (n=1)	• There is good cooperation in the work team (n=19) • Good communication strategies in the work team (n=11) • Likes working alone (n=9) --- • Poor communication in the work team (n=6) • Cooperation is non-existent (n=5) • Miss cooperation with co-workers (n=5) • The cooperation could have been better (n=4)	• The social fellowship is good and positive (n=30) • Likes meeting co-workers outside work (n=18) • The social relationship with co-workers is an important part of making the work pleasant (n=4) • Support from co-workers (n=3) --- • Feels lonely and isolated from the social fellowship(n=3) • Misses meeting co-workers outside work (n=3) • The social fellowship is negative (n=2) • Does not get on well with all co-workers (n=2) • Disappointed with co-workers social interaction (n=1)

Note: The codes above the dashed lines represent support and the codes beneath represent interference with work performance, well-being, and satisfaction

7. Supervisor interaction	8. Work role standards	9. Work role style
• The communication and relationship with the supervisor is good (n=15) • The supervisor is sympathetic, supportive and cares (n=13) • The supervisor is fair (n=4), is wise (n=1), is responsible (n=1), inspires enthusiasm (n=1), is a good leader (n=1) --- • The supervisor is unsympathetic (n=12) • The communication between the supervisor and the participant is inadequate (n=7) • The supervisor does not give feedback to the expected extent (n=3) • Disappointment with the supervisor for not accepting suggestions to make the work situation better (n=2) • The supervisor does not take responsibility (n=2), take the time needed for supervisor interaction (n=2), know what it is like at work (n=2), try to make the work situation as good as possible (n=1) • The supervisor is stubborn (n=1), unfair (n=1), not socially competent (n=1), lacking in humility (n=1) • Having disputes with supervisor (n=1) • Fear about making suggestions to the supervisor (n=1)	• The expectations of themselves and others are stimulating (n=10) • The expectations are positive when able to live up to them (n=9) --- • The expectations are too high (n=11) • Cannot live up to the expectations (n=6) • The expectations bring negative consequences in the form of stress and frustration (n=5) • The expectations are too low (n=1)	• Makes own plans for organizing the work (n=25) • Cannot influence the content of the work but is content with this (n=7) • Plans with others how to organize the work (n=2) --- • Lacks influence on content of work (n=16) • Possibilities of influencing the content of the work tasks (n=5)

10. Interaction with others	11. Rewards	12. Sensory qualities
• Interaction with others works well (n=26) • The interaction is stimulating (n=13) • The interaction is the best thing about work (n=8) --- • Needs more knowledge to better handle the interaction (n=5) • The interaction works well sometimes and sometimes does not (n=3) • The interaction is too emotionally demanding (n=3) • The interaction depends on how the participants feel (n=2)	• Stable employment (n=9) • Content with the rewards (n=4) • The work per se implies the possibility of personal development (n=3) • The salary is good (n=2) • No rewards but this does not matter (n=2) --- • Insecure employment (n=12) • Lacks employer rewards in the form of encouragement (n=11) • Wishes that the rewards were of a different form (n=10) • The salary is too low (n=7) • Lacks rewards (n=6) • Previously had rewards but they were taken away (n=3)	• The sensory qualities of the workplace are good (n=19) • It is clean at work (n=2) • The temperature at work is pleasant (n=2) --- • Noise at work (n=13) • Too cold at work (n=9) • Too warm at work (n=6) • The ventilation at work is inadequate (n=6) • Unpleasant smell at work (n=4) • Inadequate light at work (n=1) • Dusty at work (n=1)

Note: The codes above the dashed lines represent support and the codes beneath represent interference with work performance, well-being, and satisfaction

13. Physical arrangements	14. Social atmosphere	15. Properties of objects
• The physical arrangements are adequate and good (n=22) --- • There is too little work space (n=13) • The workplace is messy (n=3) • The work place is not secluded enough (n=3) • The physical work environment is not suitable for the work (n=3) • There are too long walk distances at work (n=2) • There are unsuitable work heights (n=1) • There is poor communication possibilities between work spaces which necessitates detours (n=1)	• A good atmosphere (n=19) • Gets on well with co-workers (n=13) • Co-workers care about and support each other at work (n=8) • Having fun together (n=7) --- • Conflicts (n=5) • Bad atmosphere between co-workers (n=4) • Presence of victimization (n=4) • The employer makes the work unpleasant for the co-workers (n=2) • Non-supportive and non-caring co-workers (n=2) • Absence of laughter (n=1) • Low work moral (n=1)	• Has the work equipment needed and it functions well (n=25) • Has the competence to handle the work equipment (n=14) • Adapted work equipment (n=1) --- • The work equipment does not function well (n=11) • Physical difficulties when handling the equipment (n=8) • Lacks some work tools (n=5) • Not adapted work equipment (n=1) • Emotional distress when handling the equipment (n=1)
16. Physical amenities	**17. Meaning of work**	
• The non-work facilities are pleasant and function well (n=31) --- • Lacks the possibility of using the facilities at a specific work place due to working at other places (n=5) • Lacks a resting room at the work place (n=4) • The staff room is too small (n=5) • The staff room is messy (n=2) • The staff room does not function well (n=2) • The staff room is badly situated (n=2)	• The work per se is important (n=15) • Finds value in the things done at work (n=9) • Does useful and valued things at work (n=9) • The work is important for the participant (n=7) • Proud of the work they do (n=4) • Proud of being regarded as competent (n=3) --- • Uncertain about the value of the work they do (n=6) • The work per se is not important (n=3) • Not proud of the work performed (n=1)	

Note: The codes above the dashed lines represent support and the codes beneath represent interference with work performance, well-being, and satisfaction

Table 7. Statistical differences in WEIS ratings between a) women and men, b) participants with somatic and mental diseases and c) participants who work and who are on fulltime sick leave.

WEIS item	a) Women (n=34) Men (n=19)	b) Somatic (n=39) Mental (n=14)	c) Working (n=39) Non working (n=14)
	p-value	*p*-value	*p*-value
1. Time demands	0.21	0.59	0.31
2. Task demands	0.59	0.09	0.06
3. Appeal of work tasks	0.72	0.04*	0.08
4. Work schedule	0.61	0.05*	0.96
5. Co-worker interaction	0.19	0.23	0.23
6. Work group membership	0.29	0.31	0.03*
7. Supervisor interaction	0.99	0.58	0.29
8. Work role standards	0.91	0.11	0.83
9. Work role style	0.93	0.19	0.88
10. Interaction with others	0.31	0.94	0.76
11. Rewards	0.41	0.40	0.54
12. Sensory qualities	0.77	0.02*	0.11
13. Physical arrangement	0.76	0.11	0.53
14. Social atmosphere	0.72	0.14	0.04*
15. Properties of objects	0.72	0.01*	0.31
16. Physical amenities	0.40	0.10	0.72
17. Meaning of work	0.17	0.02*	0.62

Note. Mann-Whitney *U* test is used, * $p<0.05$