

European Ways to Combat Psychosocial Risks Related to Work Organisation: Towards Organisational Interventions?

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Contents

1	Organisational interventions to combat psychosocial factors of stress	1
1.1	PEROSH pillar group on ‘psychosocial factors and work organisation’	1
1.2	Framework.....	1
1.3	Overview of the contributions	3
2	Programme PEROSH workshop	5
3	AMI (Denmark)	7
3.1	Background.....	7
3.2	The national plan for the improvement of the work environment	8
3.3	Improvement of the psychosocial work environment.....	8
3.4	How the goals are expected to be achieved	9
3.5	How the improvements are going to take place.....	10
4	NIWL (Sweden)	13
4.1	Background.....	13
4.2	Government policies and actions	14
4.3	Experts and employers.....	15
4.4	Research.....	16
4.4.1	Implications for future research on interventions	18
5	BIA (Germany)	23
5.1	Introduction.....	23
5.2	Characteristics of the TIE method	25
5.3	Research on the effectiveness of the TIE.....	25
5.4	Costs, benefit and transfer of the TIE	26
6	BAuA (Germany)	29
6.1	Introduction.....	29
6.2	Changes in the German OSH system.....	29
6.3	Changes in the workforce	30
6.4	New organisational forms	30
6.5	New forms of contractual relationships	31
6.6	New patterns of working time.....	31
6.7	Growing use of technology.....	32
6.8	OSH-implications	32
6.9	Future fields of OSH research.....	33
6.10	Innovation potential for occupational safety and health research.....	34
7	CIOP (Poland)	37
7.1	Introduction.....	37
7.2	The present study	39
7.3	Method.....	39
7.4	Results.....	40
7.5	Discussion	42

8	INRS (France)	47
8.1	Introduction.....	47
8.2	Approaches being used in France	48
8.2.1	Work psychodynamics approach	49
8.2.2	Ergonomics approach	50
8.3	INRS studies on stress at work	51
8.3.1	Development of a method to diagnose stress at work.....	52
8.3.2	Assistance to CRAM prevention specialists conducting an intervention	53
8.3.3	Psycho-ergonomic research on stress and emotions in the workplace.....	54
8.4	How can we progress?	56
9	INSHT (Spain)	59
9.1	Background.....	59
9.2	New forms of work organisation	60
9.2.1	Literature review.....	60
9.2.2	Company interviews	60
9.2.3	Participation in the Innoflex project	61
9.3	Intervention experiences	61
10	ISPESL (Italy)	63
10.1	Background.....	63
10.2	Introduction.....	64
10.3	Initial approach	65
10.4	Wider application.....	66
10.5	Impact	67
10.6	Mobbing/bullying	67
10.7	Other Activities.....	67
11	Prevent (Belgium)	69
11.1	Introduction.....	69
11.2	Legal Basis.....	69
11.3	An overview of Belgian approaches	71
11.3.1	Analysis of working conditions and processes by experts. (quadrants 1 & 3).....	71
11.3.2	Methods based on self reporting (quadrants 1 & 3).....	72
11.3.3	Focus on the individual (quadrant 4)	75
11.4	Research.....	75
11.5	Conclusion	76
12	FIOH (Finland)	79
12.1	Introduction.....	79
12.2	Recent Finnish approaches in organizational interventions.....	80
12.3	Description of the Finnish approaches in organizational interventions	80
12.4	Promotion of a healthy and productive work organization	83
12.5	Implementing innovative organizational practices	83
12.6	A multilevel participatory organizational intervention approach	84
12.7	Modelling work processes and developing conceptual mastery of work.....	84
12.8	Discussion	85

13	TNO Work and Employment (Netherlands)	87
13.1	Introduction.....	87
13.1.1	Purpose of this paper.....	87
13.1.2	Framework for approaches to study psychosocial risk factors	87
13.1.3	Reading instruction	89
13.2	Research and interventions	89
13.2.1	A general view	89
13.3	Organisational interventions: Combat Workstress Approach.....	91
13.3.1	Quadrant 3: ‘organisational interventions’	91
13.3.2	Evaluation	97
13.4	Design oriented approach to combat stress risks	100
13.4.1	Introduction.....	100
13.4.2	Modern Sociotechnology (MST)	101
13.4.3	Relation between psychosocial risks factors and MST.....	103
13.5	Conclusion and discussion.....	105
13.5.1	Conclusion	105
13.5.2	Discussion	106
13.6	Appendix A Policy framework in the Netherlands.....	108
13.7	Appendix B Approaches to combat psychosocial risk factors.....	111
14	HSL (United Kingdom)	123
14.1	Policy background and science.....	123
14.2	Practical development.....	123
Appendix A	Evaluation criteria	125
Appendix B	Members of PEROSH	127

1 Organisational interventions to combat psychosocial factors of stress

Introduction

Evelyne Morvan, Peter Oeij & Beate Beermann

1.1 PEROSH pillar group on ‘psychosocial factors and work organisation’

Following its first meeting earlier in Copenhagen (May 2004), the pillar group ‘psychosocial factors and work organisation’ of PEROSH, Partnership for European Research in Occupational Safety and Health, has arranged a second meeting during the *Conference of the EA-OHP* (Oporto, Portugal, 25 November 2002). The members organised a workshop on the theme ‘Organisational interventions to combat psychosocial factors of stress’. The purpose is to learn from each (participating) country which activities are (being) undertaken in the field of ‘work organisation and psychosocial factors of stress’. The focus will be on organisational interventions¹ and measures and their effects in reducing work related stress (risks).

Preceding this workshop the members were invited to write a the statement-paper on the situation of their home country. This syllabus contains in each Chapter the separate papers that were delivered to the workshop. In this introduction the outline of the ‘call for papers’ is summarized. Chapter 2 presents an overall analysis of all papers.

1.2 Framework

The PEROSH pillar group on ‘psychosocial factors & work organisation’ has a special interest in psychosocial factors that are work related and are related to work organisation². However, not all countries have developed approaches³ from an organizational perspective yet. Besides, many approaches are individually oriented. Moreover, approaches differ in the degree to which they are oriented on research or on intervention. To be able for each country to present their own (variety of) approaches, we formulated definitions (see footnotes), a framework and criteria from which the members could choose elements they considered useful. Not meant as a straitjacket, we proposed this framework to be able to compare findings from all countries afterwards.

In Figure 1 we present four possible approaches of projects on stress along two dimensions. By ‘stress’ we mean to include all work related psychosocial factors. The two dimensions indicate:

¹ By intervention we mean that a process of change is set in motion, which usually starts with a diagnosis (research) and ends with the evaluation of implemented measures (advice). Interventions can be programmes at national or sector level or at organisational/enterprise level.

² Work organisation refers to how the division of work results in the structuring of the organization and the design of departments, jobs and tasks and working time schedules.

³ By ‘approaches that are used’, we are having in mind (management-) models, theories, step-by-step plans, programmes and practices.

1. a focus on stress approaches either at the level of individuals (i.e. individual / personal characteristics) or at the level of organisations (i.e. characteristics of jobs and organisations);
2. a focus on either explaining stress and effects of stress (scientific and policy research) or on interventions and measures to preventively or curatively combat stress and stress risks (consultancy, action research).

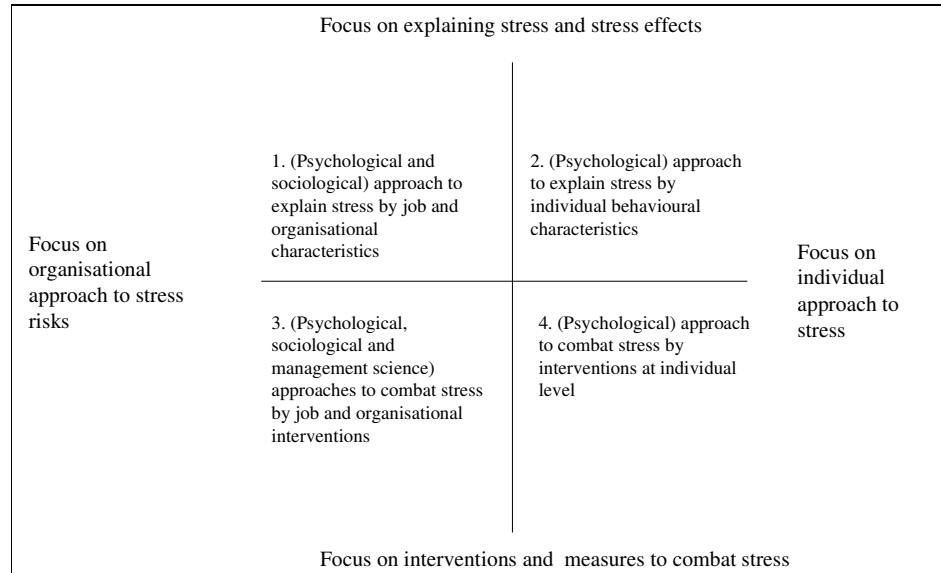


Figure 1 Approaches to research and combat stress and other psycho social factors

The two dimensions lead to four different positions in Figure 1. Quadrant 1 and 2 are more oriented towards enhancing knowledge (through research). We expect that interventions to combat psychosocial factors are mostly identified in quadrants 3 and 4. These quadrants have a more practical orientation. Our main focus, however, is to assess *organisational intervention approaches* to combat psychosocial factors: the quadrant left under (3).

Three *general* questions are relevant for our PEROSH group:

1. *What kind of approaches are used in your country to combat psychosocial factors of stress?*
2. *What measures are undertaken and what were their main incentives?*
3. *What are the results of these measures?*

Perosh-members were asked to answer these general questions in their paper if *organisational* interventions and measures are not undertaken in your country.

If, however, such *organisational* interventions and measures are undertaken in their country, we asked them to answer the following three *specific* questions:

1. *What kind of approaches are used in your country to combat psychosocial factors of stress?*
2. *What specific organisational interventions and measures are undertaken and what were their main incentives?*
3. *What are the results of interventions and measures?*

The Perosh-members were requested you to describe the most relevant national approaches and try to position them into Figure 1 (see question 1 and 2) and to, subsequently, describe the results (question 3). By doing this we hoped to arrive at some 'state of the art' overview of relevant European approaches in combating psychosocial factors from an organisational angle.

1.3 Overview of the contributions

The purpose of the workshop is, first, to learn from each other and exchange experiences. The workshop will focus on lessons learnt that might be used by each of our countries. Special attention will be given to quadrant 3. Another goal of the workshop is to take into account how the findings of the state of the art / overview possibly affect the activities of the Perosh pillar group. That is, how they may contribute to the strategy and research agenda of the participating OSH-institutes (see the programme of the workshop in Chapter 2).

As input for the discussion a quick review was made of the contributions, which shall be discussed briefly.

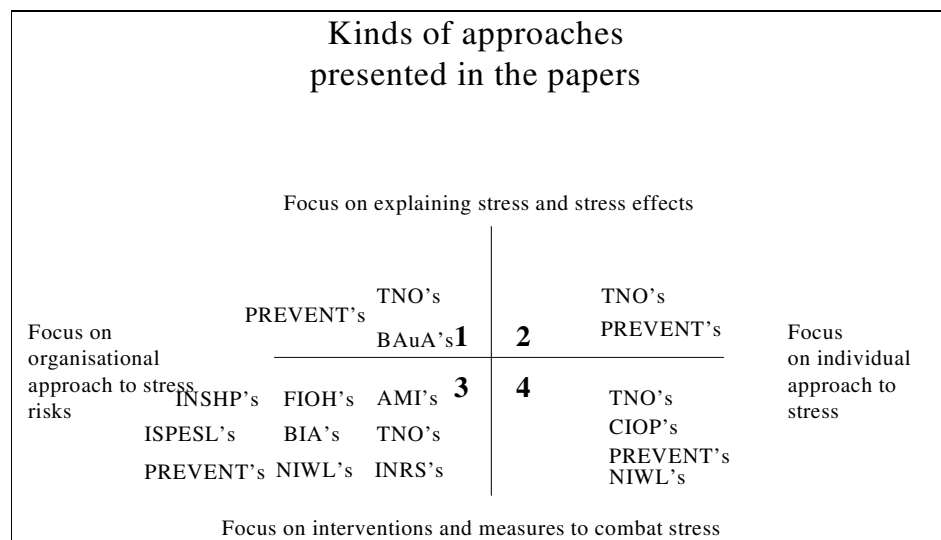


Figure 2 Approaches presented in the papers

Figure 2 indicates which kind of approaches are being discussed in the papers. This does not necessarily reflect the kind of approaches that are being undertaken by each of the corresponding institutes nor their countries. It just says what is discussed in the paper.

A quick look at the papers learns that national approaches differ in the following respects:

- Background in organisational interventions on stress issues
- Recognition of the importance of the issue
- Development of methods of organisational intervention
- Development of evaluation implementation research
- Disciplines which have a major influence (e.g., sociology, psychology, management science)
- Target level (individual, team, work unit, whole organisation, primary process)

But there are also elements that the countries are sharing:

- A legal framework (1989 European Framework Directive)
- General models for diagnosing stress (like Karasek's)
- Observation that the body of organisational intervention experiences is fairly small compared to individual interventions experiences
- Methodological difficulties to evaluate the impact of measures

Table 1 gives a summary of the topics that are being addressed by each paper. This is not so much meant as an analysis of the approaches, but as a guide to the reader.

The HSL-paper (Chapter 14) is not presented in the Table, since it was not available at the time of the workshop.

Table 2 Topics addressed in the papers

Papers	Focus	Plans, projects, studies	Methods	Evaluation, comments
AMI (Ch. 3)	Work environment psychosocial factors	Agreement		National plan and actions
NIWL (Ch. 4)	Long term sick leave	Governmental, plan, interventions (experts & research)		
BIA (Ch. 5)	Participative and integrative change process	Field study 8 manufacturing and service sector companies	TIE method, heterogeneous group, employees expert knowledge structured procedure	Positive results flexibility
BAuA (Ch. 6)	Structural changes in modern world of work	Future fields of OSH innovative research		
CIOF (Ch. 7)	Work related burnout	Individual intervention research (training program)	Cognitive behavioural methods	Decrease emotional exhaustion symptom
INRS (Ch. 8)	Work conditions, and worker's activity	3 case studies	WOCCQ Worker is the expert	Correct diagnosis but not implementation action
INSHT (Ch. 9)	Conditions for quality of life <u>and</u> performance	Projects (Innoflex, company interviews, collecting of 15 psychosocial interventions)	Semi-structured interviews in innovative firms, modelling of intervention process	Integrative approach of risks
ISPESL (Ch. 10)	Organisational wellbeing	Projects elaboration of questionnaires adapted to the Italian situation	Organisation of Work Questionnaire	Large sample (more than 3000) testing it in various contexts
PRE-VENT (Ch. 11)	Work as a system		(WOCCQ, VVBA, JCQ), participative methods	Creation of expectations
FIOH (Ch. 12)	Job and organisational stressors	6 types of organisational intervention research	Survey feedback method, participatory planning, conference method, analysis of work process; MWA	Large groups, replication, simultaneous perspectives
TNO (Ch. 13)	Primary process	Covenants (working conditions)	Combat workstress approach (several subinstruments, and several levels)	Not much hard evidence, helpful but complex
HSL (Ch. 14)	[no paper available during the workshop]			

2 Programme PEROSH workshop

25 November 2004

“Organisational Interventions to Combat Psychosocial Factors of Stress”

At
6th Annual Conference of the European Academy of Occupational Health Psychology,
Oporto (Portugal), 24-26 November 2004

Venue:
Forum da Maia
Núcleo Central do Concelho - 4470 Maia – Oporto, Portugal
Tel: +351 22 9408643
Fax: +351 229440633

Second meeting PEROSH Scientific Pillar “Work Organisation and
Psychosocial Factors”

Thursday, 25-11, Room 2, 15.30-18.00 hours

- 15.15 *welcome*
- 15.30 Opening / agenda
- 15.35 Introduction IDICT - Maria Isabel Cabral Cordovil (IDICT)
- 15.45 Overall view of the contributions – Evelyne Morvan (INRS)
- 16.00 The Danish programme– Tage Kristensen (AMI)
- 16.10 Finnish research – Kari Lindström (FIOH)
- 16.20 German TIE method – Frauke Jahn (BIA)
- 16.30 Dutch design approach – Peter Oeij (TNO)
- 16.40 *break*
- 16.50 Small group discussions on selected questions
- 17.20 Plenary presentation & discussion
- 17.50 Conclusions for future agenda
- 18.00 *closing*
- [Port Wine Reception Forum Atrium]
- 19.00 *food, drinks & pleasure*
-

3 AMI (Denmark)

The National Plan to improve the psychosocial work environment 2002-2005

Tage S. Kristensen

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Abstract

In Denmark the ministry of labour and the social partners have agreed on a national plan for the improvement of the psychosocial work environment for the period 2000-2005. The goal is a decrease of 5% of the proportion of workers exposed to psychosocial risk factors. Twelve psychosocial risk factors have been determined as indicators of the psychosocial work environment. The development of these psychosocial risk factors from 2000 to 2005 will be followed by the National Institute of Occupational Health through the National Work Environment Cohort Study, which is a large panel survey comprising approx. 10,000 employees.

3.1 Background

In Denmark the term “psychosocial work environment” was for many years a controversial concept. It was considered difficult to define and interpret, it was often seen as a “luxury problem”, the employers did not acknowledge the importance of the psychosocial factors, and the public media only showed superficial interest. This situation has changed dramatically during the last 10-15 years. Today the media write about stress, burnout, work pressure, bullying, harassment, poor leadership, exclusion from the labour market, or absence from work almost every day. The workplaces and the parties at the labour market show great interest in psychosocial factors, and hundreds of more or less systematic interventions are launched every year in order to improve the psychosocial work environment.

At AMI (NIOH, The National Institute of Occupational Health) the number of researchers in the field of psychosocial factors has increased from zero to about 20 during the same period of 10 years. Among the topics given high priority are: 1. Absence from work, exclusion, and return to work. 2. Human service work – including burnout, bullying, violence, etc. 3. New developments in the organisation of work. 4. Work and lifestyle. 5. Work, family, and gender. Besides, the institute has given priority to two methodological topics: 1. The development of psychosocial questionnaires. 2. Methods in intervention research. (Kristensen; 2002; Kristensen et al, 2002; Nielsen et al, 2002).

The researchers at AMI emphasise that the research projects are developed in collaboration with the organisations at the labour market and the representatives from the companies. This has in particular been the case in connection with the development of the two new questionnaires at AMI (the Copenhagen Psychosocial Questionnaire – COPSQ, and the Copenhagen Burnout Inventory – CBI). Also, the many intervention projects at AMI have been developed in close collaboration with the companies.

Today it is generally acknowledged that the psychosocial work environment factors play a considerable role for the occurrence of a number of diseases (in particular cardiovascular diseases), for stress, burnout, and general quality of life, for absence, social

exclusion, and turnover of personnel, and for productivity, motivation, and creativity at work.

The main discussion in Denmark today is not so much about the importance of psychosocial factors at work but about the issue of regulation. The employers feel that psychosocial factors should be improved through agreements and collaboration between the parties at the labour market – at the national level, at industry level, and at the company level. The unions do not have a clear stand on the issue. On the one hand, they agree with the employers with regard to the importance of agreements between employees and employers. And on the other hand they also stress the importance of a strong Labour Inspection with means of legal enforcement of the Work Environment Law. In this connection it should be kept in mind that about 90% of all Danish employees are organised in a union, which means that agreements between the parties at the labour market cover a substantial part of the labour market.

3.2 The national plan for the improvement of the work environment

In Denmark the regulation of the work environment usually involves three parties:

- a. The ministry of labour.
- b. The Work Environment Council (Consisting of representatives from unions, employers, representatives from the state, and experts).
- c. The Labour Inspection.

The strongest part of these three with respect to regulation of the work environment is – perhaps surprisingly – the Work Environment Council. It is important to notice that the parliament is missing here. This is due to the fact that the Danish Work Environment Law constitutes a “framework” giving parties at the labour market the power to “fill in the framework” in collaboration with the Labour Inspection. Generally, the politicians are happy if the parties at the labour market are happy.

In 2002 the Work Environment Council agreed on a National Plan for the Improvement of the Work Environment in Denmark. This plan had four points:

1. Improvement of the psychosocial work environment.
2. Decrease of the occurrence of heavy lifting (including lifting of patients).
3. Decrease of the occurrence of monotonous repetitive work.
4. Decrease of the occurrence of serious occupational accidents.

These goals were approved by the ministry of labour, and the Labour Inspection together with the National Institute of Occupational Health were given the task of operationalising and quantifying the ways in which achievement of these goals should be measured.

3.3 Improvement of the psychosocial work environment

With regard to the improvement of the psychosocial work environment it was decided that the work environment should be improved with 5% during the years 2002-2005. In practice this was quantified as a reduction of 5% of the proportion of employees exposed to harmful psychosocial exposures. Furthermore, it was decided to focus on the following twelve psychosocial work environment risk factors:

1. Low influence at work (low control).
2. Low social support at work.
3. Low rewards at work.
4. Low level of meaning of work.
5. Low predictability at work.
6. High quantitative demands (work pace).
7. Small possibilities for development at work (low skill discretion).
8. Low quality of management.
9. Role conflicts.
10. Conflicts at work.
11. Violence at work.
12. Threats of violence at work.

It was furthermore decided that the monitoring of the development of the psychosocial work environment should be based on the National Work Environment Cohort Study (NWECS) conducted by NIOH every five years (1900, 1995, 2000, 2005, etc) (Burr et al, 2003). The NWECS is an open panel questionnaire study comprising Danish employees 18-59 years of age. The sample size has been 5,000 or more during the years of study.

The twelve dimensions were measured with scales based on 2-4 questions (items) in the year 2000. The only exceptions were quantitative demands, threats of violence, and violence. These three dimensions were measured with one item only. For each dimension a scale has been constructed going from 0 to 100. Zero (0) stands for the absolute minimum (no influence, no violence) and 100 for the highest possible level.

The fulfilment of the national goal will be evaluated in two ways:

1. A decrease of 5% from 2000 to 2005 on each of the 12 dimensions for the workforce as a whole.
2. A decrease of 5% from 2000 to 2005 on an overall measure constructed as the average of the 12 scales.

The decrease of 5% will also be assessed in two ways:

1. As a decrease of 5% on the scales in question. (E.g. a decrease from 50 to 47.5 points in average). This is “the continuous measure”.
2. As a decrease of 5% of the proportion of the workforce in the “high risk group”. This is the “dichotomised measure”. In practice the high risk group is defined as the 25% with the poorest psychosocial work environment in the year 2000.

It will be the task of the NIOH to carry out the NWECS in 2005 and to perform the calculations needed in order to evaluate the fulfilment of the national plan. It is expected that the evaluation will be presented in the beginning of 2006.

3.4 How the goals are expected to be achieved

One of the interesting aspects of the national plan is that the National Work Environment Council does not have any ways of enforcing the changes necessary in order to achieve the national goals. It is believed that the goals will be achieved by motivating the organisations at the labour market. These organisations have contact with the individual companies, and they are believed to influence the companies to take action with regard to the four targets of the national policy. The whole model is based on the as-

sumption that the companies follow the intentions of the organisations in the Work Environment Council and that the initiatives taken by the companies are efficient. These “intermediate steps” in the change process will not be monitored during the years 2000-2005.

It should be kept in mind that the work environment of a country may very well improve over time without any improvements of the work environment of any company or industry. This happens when companies and sectors with poor working conditions experience reductions in manpower, while industries with better working conditions (such as office work, service work) expand. Thus, the National Plan in Denmark may very well turn out to be a “success” without any improvements made in any companies. In fact, it has been shown earlier that the work environment became better due to changes in the composition of the workforce – and not to actual improvements of the working conditions at the workplaces (Burr et al, 2003).

3.5 How the improvements are going to take place

In Denmark it is generally assumed that the psychosocial work environment has to be improved through changes of job content and/or changes of the organisation of work. This roughly corresponds to the third quadrant in Figure 1, Chapter 1. (Focus on the organisational approach and focus on interventions to combat stress).

Some of the preferred methods in Danish companies are:

- giving more influence and autonomy to the individual worker
- creating so-called “self-governing” groups
- training the employees and supervisors in conflict solving
- training the supervisors with regard to the new roles of the middle manager
- creating broader jobs through job enlargement or job enrichment
- increasing role clarity through clear descriptions of job obligations and job content
- implementing company policies on bullying, harassment, stress, and burnout
- performing surveys of the psychosocial work environment and formulating action plans based on these

There is a great interest in these issues in many companies. It should, however, be emphasized that the efforts for improvements mentioned here are carried out while the companies at the same time increase the demands on the employees and decide on outsourcing and downsizing. Thus, deterioration and improvements go hand in hand at the Danish labour market. It is still unclear if the improvements going on will be strong enough to counteract the increasing demands on the workers.

The Danish national plan for the improvement of the psychosocial work environment is to a large degree a plan fostered by an elite consisting of a few public employees and top representatives of a handful of organisations. Most of the Danish companies probably heard very little or nothing about this plan. Still, it is assumed that the goals of the plan will be achieved through the actions of thousands of employers and employees at the “floor level” of the companies. This is an interesting example of how modern politics is carried out.

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4 NIWL (Sweden)

Organisational interventions to combat psychosocial risk factors of stress. A Swedish perspective

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Abstract

Interventions with an organisational approach have dominated actions supported by governmental policies and research funds. Interventions implemented by employers and experts such as OHS, seem most often to be individual-oriented. Research and scientific evaluations of intervention projects are rare in Sweden and the results are not very clear. An alternative to intra-organisational interventions could be to focus upon actors with influence over strategic decisions, such as political assemblies, corporations, employers' organisations, unions and public authorities. This kind of research and development projects, targeting factors at the structural and the local levels are now implemented in four regions in Sweden in cooperation with the National Institute for Working Life.

4.1 Background

In recent years, long-term sick leave has been the overwhelming target for interventions in Sweden. It is due to the fact that long-term sick leaves have increased tremendously since 1998 (Högstedt et al 2004). Stress and psychological problems, particularly for women in the public sector, stands for most of the increase of the long-term sick leave rates. Psychosocial and organisational risk factors of stress are discussed mainly in relation to sick-leaves. There is an on-going lively debate on the causes to the high sick leave rates with individual related explanations (such as changed attitudes, increased age in the working population, the double-burden of women, leisure activities) on one side and structural factors (such as the unemployment rate, globalisation, de-regulation, budget control and budget cuts in the public sector, privatisation of public services, changes in the application of social security systems and changed job contracts leading to increased job intensity and an overall feeling of insecurity), and work environment changes (such as increased job intensity, decreased control and development possibilities, frequent re-organisations and downsizing) on the other side. The implications for interventions of these explanations are very different. The main part of the scientific society as well as union and government representatives seem to agree upon that work environment and structural changes are most probable as the main cause and that structural and organisational interventions are needed. Employers' organisations mainly object to such explanations and tend to choose individualised explanations.

Intervention as a concept is not easy to separate from "prevention" and "health promotion" (see e.g. Jeding et al 1999). It seems, at least by searching in databases for Swedish cases, that projects are seldom labelled as "interventions". However, the overview in the present paper is limited to organisational-oriented interventions to combat psychosocial risk factors. This means that interventions to combat other risk factors, such as physical/ergonomic ones are excluded. It should be mentioned that this target for interventions has been common in Sweden. Development projects aiming at supporting learning, development and growth in workplaces (see e.g. Nilsson 1999,

Wilhelmson 2003) are also excluded. This is also a large field for research but mainly adopting an action research perspective. Health promotion (see e.g. Hansson 2004, Menckel & Österblom 2000, Setterlind 2004) is a third adjacent field that is not primarily described in the present paper.

4.2 Government policies and actions

There have been organised talks between the government and the parties at the labour market in order to reach a plan of action to combat risk factors of stress and high sick leave rates (Regeringskansliet 2003). These talks broke down on account of that they could not reach an agreement, neither on the explanations to the causes nor on an action plan. However, the government has taken an action plan in order to decrease the sick leave rates in Sweden (www.okadhalsa.regeringen.se). The Government proposals can be summarised as follows:

- New national objectives for improved occupational health
- Incentives to employers to prevent ill-health
- Mandatory accounts of sick leaves
- Mandatory rehabilitation investigation by the employers
- Partial sick leaves point of departure for medical certificates
- Additional resources to the Swedish Work Environment Authority
- Additional resources to the Social Insurance (for rehabilitation)
- Recommendations to implement health accounts in organisations
- Evaluation of systematic work environment interventions and measures are recommended
- Directed resources to the Public sector (where the largest sick leave rates are found) for structured interventions.

A large number of local authorities in communities and counties that invest own financial resources and have structured intervention plans where researchers are involved in the implementation and/or evaluation have applied for resources from this specific fund. The financially supported projects are now implemented but still no results have been presented.

The government directives to the Swedish Work Environment Authority aim at strengthening the labour inspections regarding work organisation and psychosocial work environment and increasing implementation of Systematic Work Environment Management (just about 40% of all employers comply with the recommendations). An education programme has been carried out and half of the approximately 400 labour inspectors in Sweden have participated⁴.

In the beginning of the 1990's, there was a similar situation with reports on increased work environment problems and work-related health problems (such as stress, and musculoskeletal disorders). A fund was initiated by the government assigned to interventions directed at organisational and psychosocial risk factors at work places in Sweden (the Swedish Working Life Fund). 25 000 workplace projects were funded between 1990 and 1995. Many of these projects were designed in order to increase participation, increase job rotation, flattening the organisational form and ergonomic improvements. Large investments in new technology were also implemented. Other projects were more person-oriented, such as stress management, training and

⁴ A three weeks course including one week on stress and psychosocial factors, one week on work organization and management strategies and one week of the juridical aspects. The National Institute for Working Life in Stockholm were responsible for the first two weeks.

recreation facilities for the workers. The expectations were high that the investments and the modernising of organisations should lead to “healthy work” (Bulin & Nilsson 1994). Serious overall evaluations have not been performed. Evaluations of some of the intervention projects differ in quality and give varying results why it is impossible to draw general conclusions on consequences for psychosocial working conditions and health (von Otter 1997, Gustavsen et al 1995). Results of a survey to a sample of 1342 contact persons to the Working Life Funded projects showed that the productivity had increased but very few positive consequences were observed for the working conditions by organisational interventions (Gustavsen et al 1995). The implementation period was accompanied by a recession in the first part of the 1990’s and the unemployment rate increased to levels that had not been seen in Sweden for many decades. A similar situation was in place in another large programme for intervention, targeting musculoskeletal disorders⁵, initiated by the Swedish Work Environment Fund (Leijon & Ohlsson 1994). It has been proposed that the aims of both these large research programmes changed during the implementation from prevention of hazardous working conditions to increasing the productivity (Leijon & Ohlsson 1994, Gustavsen et al 1995). Furthermore, some researchers proposed that organisational interventions supported by publicly financed large programmes might have resulted in increased job intensity and modernisation of organisations rather than improving working conditions (Leijon & Ohlsson 1994).

Sweden has a long tradition in occupational and work environment research, policies and work redesign. However, financial resources for research have decreased lately (Johansson 1999) and the future for occupational research is debated (Abrahamsson & Hedmark 2004).

It can be concluded that the state has been an important actor in work environment issues, particularly with regard to policies and resource allocation in order to strengthen interventions directed at organisational and psychosocial factors and stress problems (see e.g. Bäckström 1999). Thus, organisation-oriented interventions have dominated actions supported by governmental policies. In spite of these actions, stress problems seem to even have increased the last decade.

4.3 Experts and employers

Insurance companies have invested in special programmes for research and development targeting stress problems in working life. Large research and development programmes are now being implemented. They are both organisational and individual oriented. Public and private stress clinics have started offering individual oriented interventions or rehabilitation programmes (secondary prevention). Some of them are seriously evaluated and seem to show encouraging results regarding rehabilitation of individuals. But, they are not directed at changing the causes of stress at the work place. General public financial support to Occupational Health Services for organisations was removed by a decision in the Swedish parliament. OHS are now acting at a highly competitive market, performing what the commissioners (which are the employers), are asking for. It seems as OHS more and more are engaged in individual-oriented actions. Stress-networks have started where researchers and practitioners meet and exchange experience on methods for interventions. Furthermore, large companies have set up their own health promotion programmes, directed both at organisational and psychosocial factors and the employees (such as

⁵ Belastningsskadeprogrammet

life-style, recreation, training). Local networks of companies have been started and are cooperating in intervention programmes to combat psychosocial risk factors and in rehabilitation activities. Altogether, a variety of all types of interventions can be found although interventions classified as individual-oriented seem to dominate. Interventions initiated by companies themselves and sometimes implemented with the support of experts, are seldom reported and evaluated, at least not by scientific methods.

4.4 Research

Research on intervention, applying an organisation-oriented and/or person-oriented approach, is rare in Sweden. Most research on stress has been of a risk-identifying character within a medical-psychological perspective. In organisation research projects where day to day practices and employee reactions to the organisation of work is almost non-existing. Most organisation research is focussed upon growth and development processes, management strategies, and implementation of TQM, New Public Management etc. Very few scientifically implemented interventions have been evaluated (Theorell 1999). A national overview of all intervention research projects has not been possible to do. But a search in a couple of databases (ARBLINE, the National Institute for Working Life project catalogue and the largest research fund in the field: the Swedish Council for Working Life and Social Research) indicates a very small sample of intervention projects during the last five years. These can be classified as follows:

- Organisational interventions (primary prevention)
- Organisational interventions (secondary prevention)
- Individual-oriented interventions (primary prevention)
- Individual-oriented interventions regarding rehabilitation of employees with identified stress/burnout symptoms (secondary prevention)
- Interventions regarding rehabilitation procedures, work environment policies, staff policies, systematic work environment surveillance

The objectives are of varying character but the following seem to dominate:

- Increase knowledge on work organisation, psychosocial factors and stress, directed at working groups and/or supervisors
- Increase participation, dialogue, support and feedback
- Ergonomic improvements
- Work schedule changes
- Clearer goals and mandates for supervisors
- Changes in the surroundings of work (such as the traffic situation for busdrivers, improvements of receiving docks for lorry drivers)
- Improve health-related behaviour
- Stress management.

The majority of scientific and evaluated interventions can be classified as mainly organisational-oriented interventions⁶ targeting either all employees at the work place (primary prevention) (Brunnberg et al 1998, Eklöf 2004, Evans, Johansson & Rydstedt 1999, Orth-Gomér et al 1994, Rydstedt, Johansson & Evans 1998, Theorell et al 1995, Theorell & Wahlstedt 1999, Theorell et al 2001,) or employees in need of

⁶ The organizational level interventions have in most these cases been accompanied with individual-level oriented interventions.

rehabilitation (secondary prevention) (Arnetz et al 2003, Goine et al 2004, Perski & Grossi 2004). However, individual-oriented interventions also exist (Lisspers, Ståhl & Setterlind 2004). The measures used as outcomes have in many cases been psycho-physiological indicators (such as cortisol, blood pressure). Other examples are self-reports on working conditions, job satisfaction, well-being, symptoms of ill-health and sick-leave rates. In some rare cases, scientific methods for evaluation have been of high quality, meaning that control groups, pre- and post measurements, and process evaluations have been used. The planned evaluation has sometimes not been able to be completed on account of restructuring or selling out of the participating organisation. The results of evaluated interventions are not very clear. Some studies show improvement with regard to some psycho-physiological indicators of stress and no changes in others in comparison with control groups and/or in relation to pre-tests. In most studies self-reported participation and job satisfaction (that is supportive factors) are improved but not accompanied with improved working conditions with regard to the identified risk factors, . Both increased and decreased job demands in the experiment groups compared to the control groups have been noted (Theorell 1999). One explanation might be that the level of aspiration also has increased by the intervention. When self-reports are used this is a methodological problem (Westlander 2003).

A couple of studies show that intervention directed only to supervisors indicates improvement of working conditions (Eklöf 2004, Theorell 2001). Most research in the field, identify a participatory approach as necessary for successful intervention. One researcher concluded that this means a paradox as: “in order to improve demands, support and stress through participatory ergonomics, these effects must already be present to some degree!” (Eklöf 2004, p 48).

The main conclusion is that interventions projects that are implemented and evaluated by scientific methods are very rare in Sweden. Interventions are by necessity very complex to implement and to evaluate as organisations are continuously changing both with regard to “within” organisational phenomena and with regard to their context, such as the market situation, the financial situation and the employment rate in the society (Eklöf 2004). Organisations also change with regard to their size, their affiliation to corporations, ownership, and even their very existence. Staff turnover is particularly large in some branches, which means that there might be other employees in the end of an intervention compared to the start. Consequently, assessing effects on interventions that can be attributed to the intervention itself is almost impossible to do. It is worth mentioning that several research projects in Sweden aiming at evaluating changes in organisations and labour policies that are implemented for other reasons than improving work environment have been performed. Studies of this type of interventions are also valuable in order to reach understanding of consequences for the psychosocial working conditions of a variety of changes occurring at work places (see e.g. Melin et al 1999, Ingelgård & Norrgren 2001, Bildt et al 1999, Härenstam et al 2004).

An alternative to deep studies of interventions at specific workplaces is to intervene at a higher level targeting other actors in addition to the managers and the employees. This could encompass interventions regarding rehabilitation procedures, work environment policies, staff policies, systematic work environment surveillance, social security systems and other official functions regarding the labour market. This means that actors at a higher level, with influence over strategic decisions, such as political assemblies, corporations, employers’ organisations, unions and public authorities are also involved. It seems increasingly important to explore a broader range of potential

sources of power over working conditions in addition to the intra-organisational ones⁷. Interventions or rather research and development projects targeting factors at the structural and the local levels have been performed in collaboration between researchers, local authorities, experts and practitioners in Sweden lately. At the National Institute for Working Life, researchers are now involved in a number of intervention projects implemented at several workplaces in four different counties in Sweden⁸. These projects engage to different degrees actors also outside the work places and target both intra-organisational and macro-level conditions as well as cooperation between the actors. Similarly, research groups at other institutions in Sweden are involved in sector specific intervention projects over a long time period (HAKuL, 2004). Hopefully, this macro-meso- and micro level approach could facilitate more powerful measures with regard to psychosocial risk factors in Swedish working life.

4.4.1 *Implications for future research on interventions*

Developments in the labour market regarding existing principles of business administration, globalisation, technological advances, and such are indisputable. However, knowledge regarding how to promote a good work environment is needed to counteract negative consequences for the working conditions of the ongoing transformation of working life. Interventions to combat psychosocial risk factors should be taken after problems have been properly linked to their causes, needs and obstacles have been identified, objectives have been named, responsibility and authority for these measures has been established and, finally, stake holders, driving forces, and resources have been considered. Furthermore, methods for intervention at particularly the organisational level as well as methods for evaluation should be developed. Recommendations for successful organisational level interventions have been proposed (Eklöf 2004, Theorell 1999, European Commission 1999). These include for example:

- Be clear of the motives and the objectives for the intervention
- Take company specific characteristics into account
- Take into account that organisations are ever changing, dynamic entities
- Each individual and organisation reacts uniquely to stressors
- Bottom-up approach and top-level support facilitate change
- Group feedback and discussions are important components
- A learning strategy facilitates positive effects of the intervention
- Be prepared for conflicting opinions and resistance

⁷ This issue is explored by cases studies in both the private and public sector in an ongoing research project: Where is the power over working conditions found? Marklund S, Härenstam A et al. National Institute for Working Life. <http://projekt.arbetslivsinstitutet.se/Presentation.aspx?projID=312> Swedish council for working life and social research, grant nr 2002-0316.

⁸ In Skåne (Samverkan för friskare arbetsliv i Skåne. Arbetslivsinstitutet, Syd, <http://projekt.arbetslivsinstitutet.se/Presentation.aspx?projID=328>); Jämtland (Vinberg 2004, Attraktiva arbetsplatser, Arbetslivsinstitutet Foup/Östersund <http://projekt.arbetslivsinstitutet.se/Presentation.aspx?projID=413>, Friskare arbetsplatser i kommuner och landsting, Arbetslivsinstitutet Foup/Östersund, <http://projekt.arbetslivsinstitutet.se/Presentation.aspx?projID=103>);

Sörmland (Larsson & Kankkunen 2004, RAR, Resultatnriktat arbets- och rehabiliteringsarbete i Sörmland, Arbetslivsinstitutet, Arbetshälsa; http://www.rar.sormland.se/uploaded_files/Komplettering_Naringsdep_LS_TOR.pdf);

and Östergötland (Karlqvist, Bildt & Dahlberg 2004, Kön och arbete, Arbetslivsinstitutet, Foup <http://projekt.arbetslivsinstitutet.se/Presentation.aspx?projID=405>

- Changes take time

At the strategic level, political, scientific, and inter-party groups have recommended general systems for implementing preventive measures in the work environment (Frick et al 2000, ILO 2001, Levi, Sauter and Shimomitsu 2000). As the problems differ between branches, types of operations and workplaces (Härenstam et al 2005), a multifaceted approach to interventions adapted to branch-specific problems is needed (European Commission 1999).

Furthermore, successful intervention should be integrated in the core management agenda. Development of strategic stress management directed at stress as a structural problem is recommended (Styhre & Ingelgård 2003). This would help to achieve a balance between production conditions, economic factors, and working conditions adjusted to the conditions in all segments of working life.

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5 BIA (Germany)

Organisational changes through integrative and participative approaches: The Task-oriented Information Exchange (TIE) method to change work processes

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Abstract

The TIE supports organisational changes in companies. The intervention method is based on empirical studies and was originally developed by Neubert and Tomczyk (1986) and then modified by Jahn, Wetzstein and Hacker (2002). Following a fix sequence, an external facilitator supports the heterogeneous TIE group (employees, experts, managers) in analysing work problems, developing ideas and appropriate solutions, and implementing them. In a field study we have investigated the different effects of this method on changes in work processes. Not only did the effectiveness of work processes and the product and service quality improve, but also the personality and health promotion.

5.1 Introduction

There are many interventions in Germany to reduce psycho social factors of stress at the individual level (Kreis & Bödeker, 2004) and many instruments to analyse work characteristics (Dunckel, 1999). But there are only a few approaches, which integrate analysis, intervention and evaluation as well as the individual and organisational perspective. The number of approaches, in which employees participate, is even lower.

In the participative and integrative approaches the employees are the “experts of their work”. These approaches aim to change the condition of the work place, work organisation and work content. The main objectives are to reduce work-load, to promote health and to increase performance. In such a change process analysis and intervention alternate and both individual as well as organisational solutions are developed.

In this paper an organisational method is presented and encompassed from other methods as an example of participative and integrative intervention. The method is called “Task-oriented Information Exchange (TIE)”. The TIE supports organisational changes in companies. TIE should optimise work processes, improve the performance and the quality, reduce the strain and protect and promote the health of the employees. The intervention method is based on empirical studies in occupational, social and cognitive psychology and was originally developed by Neubert and Tomczyk (1986) and then modified by Jahn, Wetzstein and Hacker (2002).

The TIE is comparable to the Health Circle (Berlin model and Düsseldorf model) but only partly comparable to the Quality Circle (Deppe, 1986) and to the Participative Productivity Management (Pritchard, Kleinbeck & Schmidt, 1993). The table 1 shows the differences between the TIE and the two models of the Health Circle. The main differences are:

1. the integration of analysis and evaluation in the change process,
2. the group composition,

3. and the integrative objectives of the TIE (health and performance, individual behaviour and work conditions, work organisation and job content).

The similarities are:

1. the structured, and solution-oriented procedure,
2. regular group meetings,
3. and the aim to promote health.

Table 1 Differences between Health Circle and Task-oriented Information Exchange

	Health Circle		Task-oriented Information Exchange
	Berlin model	Düsseldorf model	
composition of group	homogeneous	horizontal heterogeneous	horizontal and vertical heterogeneous
content of change	occupational health promotion	occupational health promotion	occupational health promotion and performance improvement
approach	individual behaviour	work conditions, work organisation, job content	work conditions, work organisation, job content, and individual behaviour
date of development	in the middle of the 1980 th	in the middle of the 1980 th	in the beginning of the 1980 th , further development since 1999
literature	Friczewski, 1994	Slesina, 1987	Neubert & Tomczyk, 1986; Jahn, Wetzstein, Ishig & Hacker, 2002

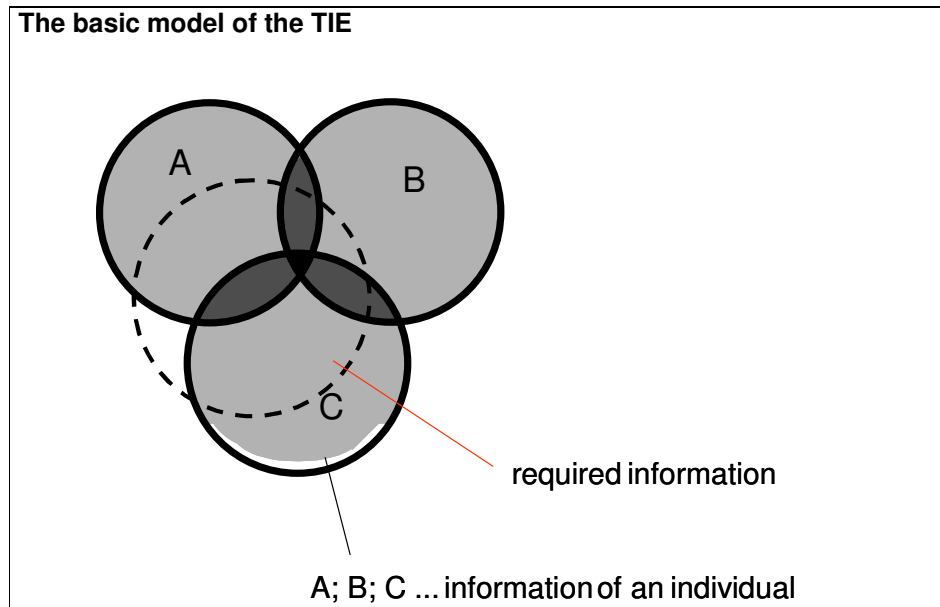


Figure 1 Basic model of TIE

Because of the vertical and horizontal heterogeneous composition of the group in the TIE process, the different individuals (shown as the black circles, figure 1) have the required information (shown as the dashed circle) to a different extent. Some of this required information is possessed by only a single individual (the light grey fields) some is possessed by several individuals (partially shared information, the dark grey fields), and some is possessed by all individuals (shared information, the little black field). Some of the required information can be unknown to all individuals (the white field) and obviously all individuals together have more information than any individual

alone. In order to improve or change any work processes this heterogeneous knowledge has to be integrated and applied.

5.2 Characteristics of the TIE method

The TIE is a hybrid strategy which integrates advantages of different types of group work and individual work. Following a fix sequence, an external facilitator supports the TIE group of employees, experts and managers in analysing work problems, developing new ideas and appropriate solutions, and implementing them (figure 2).

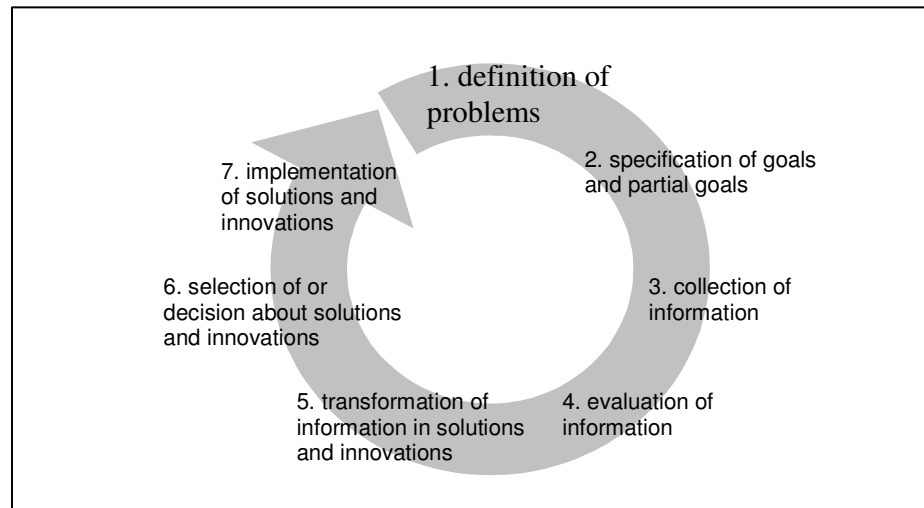


Figure 2 The TIE process sequence

The TIE group is composed of 6 to 12 members from different levels of the organisational hierarchy and from different units of the organisation (vertical and horizontal heterogeneity). The advantage of the employees' participation in the TIE is that they are the actual experts of their tasks, although managers are very important for implementing decisions about solutions during the TIE process. The TIE is supported by specific techniques, such as moderation, creativity techniques, and methods of evaluation and decision. The not participating employees are integrated by an information model (documentation, communication, integration in analysis and implementation of solutions). The TIE process consists of 8 to 12 sessions, which take place regularly once a week or every 2 weeks. A session takes 1 to 2 hours. Between the sessions both the participants and the external facilitator receive so called "homework". These tasks (such as asking other experts or not participating colleagues for specific information, additional analysis, and implementing solutions) have been assigned by the group and have to be done by the next session. This takes place at the work place. That way the TIE integrates not only explicit knowledge, which can be verbalised, but also implicit knowledge, which can be brought out only in the real working activity.

5.3 Research on the effectiveness of the TIE

In a field study with 8 manufacturing and service-sector companies (N=62), we have investigated the different effects of this method on changes in work processes. At the

end of the TIE process, about 70% of all developed solutions had been implemented. Further implementation followed. Not only did the effectiveness of work processes (e.g. improvement of shift changeover, reduction of work steps) and the product and service quality (e.g. decrease in errors) improve, but also the personality and health promotion (e.g. improved work content, job commitment, reduction of sickness absence).

After comparing the first and last sessions, one could see that there was a significant increase in the participant's acceptance of the method and their activity and motivation for a change. It was also obvious that the TIE has led to an increased learning and a better task performance among the employees. Additionally, the solutions were transferable to the participants' work situation and partly to neighbour departments.

Examples (Wetzstein, 2004):

In a chip manufacturing company we identified 6 general problems with a lot of partial problems. In total of 3 months after the TIE process, 65% of the developed solutions were implemented. Only 11% were dealt with, without a solution being found. Some problems were solved in other work groups.

Some economic effects of the TIE intervention in this company were:

- increase of faultless batches per week by 43%,
- decrease of the waiting time by 23% and running time by 12%,
- reduction of errors by 27%,
- reduction of working steps by 24%.

So the effectiveness of work processes and the product and service quality improved.

Some social effects of the TIE intervention in other companies have been:

- increased learning, increase of mental activities through enrichment of job content,
- reduction of the wish to leave the company from 22% to 10%,
- reduction of sickness absence from 19% to 7% in a call centre.

5.4 Costs, benefit and transfer of the TIE

To use employee's expert knowledge is from the point of view of human work design a way to develop human resources, and from a pragmatic and economic point of view a way of enabling individual problem solving in organisations, where it cannot be done by external experts. The psychologist's role is to facilitate the participant's his own problem solving. The solutions that resulted from such a process are seen as a participant's property and can, as a rule, be accepted. As a consequence, the accompanying resistance to change is avoided.

The Task-Oriented Information Exchange is practicable in the production and in the service sector and potentially transferable to companies in other countries. The method is flexible and adaptable to local work conditions and work organisations. The costs include the working time of the participating employees, managers and experts and the charge for the facilitator or the training costs for an own facilitator. In some cases extra resources are necessary, in particular for changing work conditions (e.g. new, ergonomic office chairs in the service sector or automatic chain hoists to reduce high physical strains in the production sector). A detailed guideline of the TIE method supports the implementation in the company (Jahn, Wetzstein, Ishig & Hacker, 2002). There is a qualification to a "certified TIE-facilitator" which is offered in the BG Institute Work and Health in Dresden, Germany

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6 BAuA (Germany)

Starting point to enhance organisational intervention to improve safety and health at work

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Abstract

Germany is undergoing profound changes at different levels (work organization, companies, labour market, system of OSH) that all influence the conditions for effective interventions.

Just like in the Swedish case, there is no overall systematic intervention and evaluation research on programmes and measures to reduce stress at work up to now. However, based on the EU framework directive, there is a growing trend to base stress reduction programmes on a risk assessment at workplace level. These programmes only gradually move from a person-oriented approach to a more integrative approach including also structural (e.g. organisational and psychosocial) factors of stress at work. At the same time, initiatives are being undertaken (e.g. the National Initiative New Quality of Work) which try to coordinate scattered activities among various partners at the branch and the workplace level. There is increasing recognition that more systematically designed and evaluated measures and programmes in the case of stress reduction are necessary.

6.1 Introduction

Germany is undergoing profound structural change which is reflected in the technological and economical developments in the labour market and in the entire social structure. There is however, very little data available on these developments. Data is available on contractual relationships and new working time patterns, but not completely on organisations. These last trends can only be pointed out in a general fashion. These developments, and in so far data is available on OSH-implications, will be presented in this chapter. Of importance for these OSH-implications are recent changes in the German OSH system. These implications will firstly be discussed.

6.2 Changes in the German OSH system

The principle of prevention which is established comprehensively in the EU framework guidelines, can be used as a innovative strategy to bring the quality of work in line with the new working conditions.

The new occupational safety and health legislation in Germany has created an effective and flexible basis for future action. Statutory regulations are no panacea. The lawmakers have recognised in recent years that no progress is made with ever more complicated statutory regulations. Germany wants to improve occupational safety and health by making it more effective and less bureaucratic. It is only flexible regulations that offer companies the latitude for occupational safety and health activities adapted to suit their situation. In particular, small and medium-sized enterprises, which are gaining ever more importance for the German economy, require support in the form of guidelines, assistance on action or the sort of tools which are found in occupational

health and safety management systems so that they can apply the regulations more effectively.

The new meaning of safety and health regulations is to contribute towards the protection, maintenance and promotion of employees' health while at the same time improving internal company management structures. In addition, successful prevention, which includes health promotion at the workplace, assures uninterrupted production by avoiding or reducing absence and fluctuation, increasing attendance and worker motivation.

6.3 Changes in the workforce

The proportion of older people in the overall population will increase sharply. There will therefore be fewer young people on the labour market in the next few years. The demographic change in Germany becomes serious: The proportion of the group of people over 60 year will increase from 21% (1995) to 23.4 % (2010) and 26.2 % in 2020 of the total population. It thus becomes considerably more important to preserve the full work capacity of all working people up to a relatively high age. This sets new requirements for employers, the education system and the labour market, and for those responsible for funding the social security system. These requirements concern the creation of suitable forms of work and technology in industrial plants so as, on the one hand, to maintain, adapt and develop further the necessary qualifications and, on the other, to preserve the health of working people for many years.

6.4 New organisational forms

New forms of work are on the increase in Germany, for example, outworking and contract work, tele-working, long-term low paid work and apparent self-employment as a new form of independence. Hierarchical structures are increasingly being replaced with more flexible organisation; organisation which is based more on team work, projects and processes and orientated towards the market and customers. The aim is towards a learning organisational structure which can cope with the permanent pressure caused by the need for organisational flexibility.

The transition from stable forms of industrial activity to organisations that are in a process of constant change requires a shift in leadership and management methods and in the design and organisation of production. This change makes new demands at all levels of the hierarchy of modern companies and administrations inclusively OHS. One of the major problems is how to renew strategies so that full use can be made of the advantages offered by new technology and how best to apply technology to new commercial opportunities. One of the most important means of overcoming these problems, and therefore one of the priorities for change in management practices and work organisation, is to focus on human competence and skills development at all levels.

While experience has shown that there is no unique formula, the most successful of today's companies and administrations have used a cluster of similar techniques to raise their effectiveness:

- commitment of workers to productivity, quality and profitability, recognising that these are prerequisites for income growth and employment security;
- continuous improvement of product quality and work methods based on shop-floor initiatives, including close relations with consumers and suppliers;

- organisational patterns designed specifically to promote the efficient application of new technologies. In other words, organisation precedes and supports innovation and technology rather than responds to it;
- complex organisational and inter-organisational arrangements to ensure continuity of production flows, minimum capital tied up in inventory and rapid adaptation to changes in demand, products or production methods;
- development of multiple skills. Training is systematic, constant and integrated into the work itself. Work becomes a lifelong learning experience
- work in teams or groups, which often have responsibilities that go far beyond task execution;
- use of networks and co-operation (supported by new information technologies) instead of bureaucratic hierarchies to plan, co-ordinate and control work;
- innovation as a conscious goal, sometimes promoted by teams outside the traditional hierarchy;
- commitment of the employer to job security. Decisions about lay-offs, plant closings, new technology and other matters reflect the view that long-term economic interests require dedicated workers who are fully confident that their employment will continue.

These developments have consequences for stress and strain of the employees: 3% of all employees in Germany (1998/99) complain of overload of work, 7% of underload of work, 50% of stress and pressure. 29% of all employees had a restructuring of their work during the last two years.

6.5 New forms of contractual relationships

In Germany there are almost 35 million workers - with about nine tenth employees and one tenth self-employed. Roughly two thirds of the employees worked in normal employment relationships and roughly one third in atypical employment relationships. Normal employment relationships still account for the majority. However, they are slowly but surely decreasing whereas the atypical employment relationships are increasing at the same rate. This tendency is promoted by the structural change:

- Increase in small enterprises with a decline in large companies;
- Growth of employment in the services industry with a reduction in the employees in manufacturing industry.

Both small enterprises and service companies tend to have a higher rate of atypical employment relationships.

6.6 New patterns of working time

The time pattern in Germany are characterised by an increase of shift work (1998/99: 22% of employees) and weekend work, staggered working hours and overtime work (1998/99: regularly and sometimes 71% of all employees), as well as the intensity of their use judged by the proportions of employees affected by each type. All trends are going towards a decoupling of individual working hours and operating hours, and are usually associated with unfavourable working time situations and times of strain for the employees.

6.7 Growing use of technology

Innovations in information and communication technology have created the conditions for an expansion of information and communication services and applications no-one could imagine a short time ago. The acquisition, processing, conveying, propagation and utilisation of information are playing an increasingly important role in industry and the world of work.

The effects of the development into the information society on employment – and hence on occupational safety and health – are varied and complex. They range from the change in existing occupations and the development of new fields of occupation, through to a change in forms of co-operation within companies, between companies and between sectors. The dynamic nature of the change to the information society involves a shift in focal tasks and the emergence of new fields of work. In the working population the percentage of those employed with regular contracts of employment will decline further with a simultaneous increase in atypical, flexible employment relationships. At the same time the new communication possibilities will help blur the boundaries between the world of work and the home environment for a section of the working population. Tele work –nearly 2% of all workers in Germany - in various forms will spread rapidly in the coming years in the view of the experts, among other things with the result that the number of freelancers and of small and very small companies will increase rapidly.

These developments mean opportunities, as well as risks and new challenges for people who have to cope with the new technologies and requirements under changed conditions regarding work organisation and forms of work... Education policy, employment policy and occupational safety and health policy will have to carry people into the new information society and offer them meaningful work and prospects.

44% of all employees in Germany have reported that in the last two years (1998/99) new technologies, new software, new machinery have been introduced and changed their work situation. New technologies mean for the relevant employees not only the introduction of new tools and equipment it always brings changes in work organisation, design of workplaces and has consequences for the work tasks, work content and qualification. Designing of work should be integrated part of the whole planning process of a company taking into account the health and safety aspects of the employees in a very early stage.

6.8 OSH-implications

With the erosion of traditional work structures there is also an erosion of the inherited procedures, strategies and concepts in occupational safety and health. Occupational safety and health must take account of the new patterns of work.

Among the urgent problems of implementation, three particular areas should be highlighted: the large and still growing number of small and medium-sized companies, the recording and analysis of the domain of psycho-social strains with their consequences, the determination of a standard performance level under the changed conditions of new work structures and organisations encompassing also ageing workforces.

Health is more than presence in the company and the efficiency of employees. Health in the company is both the prerequisite and result of a continuous and productive encounter with the conditions and challenges of work. The promotion of personal, or-

ganisational and social health potential is today a major prerequisite for corporate success and further growth in productivity.

6.9 Future fields of OSH research

The flexibilisation of corporate structures, forms of living and working, the growing importance of human resources and the productive forces of knowledge, information, qualification for greater productivity, the rate of innovation of the economic system, as well as demographic developments are relocating occupational safety and health research. From the point of view of the social sciences, the emerging consequences and fields of research are as follows:

With the changed conditions for mental strains, health, human and social resource development, qualification, the quality of working sequences and trans-cultural management, prevention takes on a central function for the design of work systems. For this purpose, concepts and strategies must be developed and models of good practice tried out.

- The development of strategies for the early identification and mastery of the effects of increasing flexibilisation in the world of work on the safety and health of employees
- The formulation of framework conditions for the health-appropriate design of working conditions in changing forms of work and organisation
- The preservation of health and efficiency over the entire period of one's working life by developing approaches which are geared to occupational histories and requirements and to the individual
- The identification of suitable models for securing the gainful activity of ageing employees by creating individual and corporate conditions, especially in small and medium-sized companies and in the service sector
- The collection of data on the change in products and their marketing in view of the structural change in industry and the service sector
- Concepts must be developed which can be used to improve the transfer of innovative research results in practice. These must be tested in the context of application-oriented research and they therefore belong to research promotion.
- Theoretically guided innovation strategies must be developed which enable the players to integrate prevention in the overall culture of the company and to adapt the design potential flexibly to the company's development, and to do this on the basis of self-organisation.
- Concepts and instruments must be developed which show how to utilise the existing knowledge cultures in the companies for the transfer.
- Concepts and instruments must be developed for the purpose of networking, also regionally and virtually, occupational safety and health research with other research systems, especially for health, social and education research (keyword: political awareness), the aim being to exploit research synergies for innovative practice in occupational safety and health.
- Against the background of the international development dynamics of work, methods and instruments must be developed which can be used to increase the forecastability of occupational safety and health research in order to give the political system and the groups of players in the occupational safety and health arena decision-making aids at an early stage (occupational safety and health as futurological research and political advice).

- Concepts and instruments must be developed for innovation-promoting strategies on the part of occupational safety and health institutions in order to improve their ability to connect with the complexity of the environment.
- Instruments must be developed for the continuous quality control of research and scientifically (not politically) defined promotion and termination criteria in order to update the quality standard.

The implementation of this catalogue requires an objective-oriented research policy and promotion.

6.10 Innovation potential for occupational safety and health research

The modern world of work is relocating occupational safety and health research. The changed conditions for mental strains, health and social processes, and the quality of working sequences with maximum freedom from disturbances and faults are shifting the subject areas of preventive occupational safety and health to centre-stage in working processes.

Before integration in practice there must be integration in research

Innovative occupational safety and health research must maintain the scientific level of old research or reflect on it further, while at the same time meeting the new requirements for visualisation in the information society: presenting complex problems in a comprehensible and readable form. For this purpose criteria must be worked out for project reports.

With the new tensions in innovative occupational safety and health research between humanisation (the human factor), economics (the benefit factor) and versatility (the process factor), it is necessary to shift the focus in a specific way. Occupational safety and health research becomes a part of work and working process design.

The subject matter of innovative occupational safety and health research in the modern world of work

Health – a central “asset” in occupational safety and health – is shifting centre-stage in working processes in the modern world of work. Occupational safety and health research does not have an adequate set of instruments to enable it to incorporate the new health potential in working processes (in the ambivalence between well-being, increased productivity and overstrain).

Human and social resources development

Innovative occupational safety and health research must demonstrate how preventive occupational safety and health supports learning processes and structures at work. On this basis, instruments must be developed which can be used to make occupational safety and health into an integral part of human and social resources development, personnel qualification and corporate policies.

Service structures in preventive occupational safety and health

The players in occupational safety and health need, like all players in the world of work, research and advice to enable them to introduce the necessary business re-engineering. Innovative occupational safety and health research must develop structures and instruments for service-oriented occupational safety and health, for a related fundamental re-organisation and a new culture of occupational safety and health.

Integration of occupational safety and health in management and organisation strategies

Innovative occupational safety and health research must develop instruments for the systematic integration of occupational safety and health in management and organisation strategies in integrated management concepts (following, for example, the European quality model). For small and medium-sized enterprises, flexible, self-controlled instruments must be developed which help develop further the overall culture of the company and which cover the entire value added chain.

Research transfer: setting chains of effects in motion

Innovative occupational safety and health research must help shape the transfer of results and integrate into projects more energetically than it has done to date. A high-quality transfer is an important criterion for research fund-provider in assessing the quality of the project as a whole

Innovative occupational safety and research needs a systematic approach and continuity as the basis for functioning chains of effects in projects. A continuous, self-organised forum on occupational safety and health must be set up, in which all the players jointly assess the situation, draw up structures and agree approaches.

7 CIOP (Poland)

The evaluation of a stress and burnout intervention for teachers.

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Abstract

The problem of psychosocial factors in work-related stress has become well acknowledged in the recent years in Poland. Although any systematic or well-designed (evaluated) organizational interventions have not been undertaken so far, the Central Institute of Labor Protection – National Research Institute is engaged in a very broad range of activities to promote and teach about the problem of psychosocial work environment. Particularly, the trainings for labor inspectors include this issue in a very large extent. The questionnaire to monitor psychosocial factors based on Karasek' model of stress was developed and several projects to evaluate stress in different occupations were launched. On the basis of data obtained, some very rigorously evaluated stress management interventions on the individual level were developed for managers, bank employees and teachers.

7.1 Introduction

Summary

The objective of the study was to develop and evaluate the 2-days burnout intervention program focused at enhancing coping with the stresses observed in teachers work. Karasek' job stress model was used as the theoretical framework. The aim of the intervention was to teach participants to better deal with high job demands and low job control and to reduce work-related burnout. Some cognitive-behavioural methods overcoming workload and enhancing a sense of self-mastery and relations with students were introduced in the workshop. Fifty nine teachers were randomly assigned to an experimental or to a control group. Results showed that one burnout symptom-emotional exhaustion, together with perceived job demands (workload and intellectual demands) decreased significantly in the intervention group. The greatest effect of the intervention was observed with regard to an increased behavioural job control. It was concluded that teaching participants how to better manage their work environment (e.g. avoiding workloads, improving relations with students) could help them in changing their perception of stressful job characteristics and reducing burnout (emotional exhaustion). (key words: work-related burnout, psychosocial work conditions, intervention to reduce burnout).

Work-related burnout has received increased research attention in recent years. Research on burnout, deal mainly with people-oriented professionals, like teachers, social workers, nurses, doctors. The work of people-oriented professionals demands a great deal of emotional, cognitive and physical energy. These overloading and conflicting demands may lead to emotional exhaustion, mental weariness and physical fatigue what is generally labelled as burnout (Maslach, Schaufeli, & Leiter, 2001; Shirom, 2002).

According to the first conceptual approach toward burnout of Maslach and her colleague (Maslach & Jackson, 1981), it is viewed as a syndrome consisting of three dimensions: emotional exhaustion reduced personal accomplishment and depersonaliza-

tion. Emotional exhaustion, which refers to feelings of being depleted of one's emotional resources. Reduced personal accomplishment indicates the tendency to evaluate oneself negatively with regard to one's competence and productivity and a lowered sense of self-efficacy. Depersonalization refers to negative, cynical or excessively detached responses to other people at work.

The MBI has been the most popular tool measuring burnout in empirical research (Lee & Ashforth, 1996; Schaufeli & Enzmann, 1998). It is often pointed out that the use of a total score to represent burnout should be avoided (e.g., Moore, 2000; Koeske & Koeske, 1989). The emotional exhaustion has been shown in meta-analytic reviews as the core component of the MBI (Schaufeli & Enzmann, 1998).

The reviews of the burnout literature (Maslach et al. 2001; Shirom, 2002) state it as a consequence of one's exposure to chronic job stress. The qualitative and quantitative overload, role conflict and ambiguity, lack of control over one's work, and lack of social support are the stresses that may lead to burnout (Shirom, 2002; Lee & Ashforth, 1996). According to another popular approach to job burnout, it results from perceptions of organizational inequity, what indicates that an individual assesses his/her inputs to work (e.g. time, attention, effort) as not relevant to the outcomes of his/her work (e.g. salary, status, appreciation, etc.) (van Dierendonck, Schaufeli & Buunk, 1996; Bakker, Schaufeli, Demerouti, Janssen, Hulst, & Brouwer, 2000).

A large number of studies confirmed the relationship between depression, anxiety, and subjectively reported health-related problems and burnout, including circulatory and heart problems, musculoskeletal pains, gastrointestinal problems, sleep disturbances, recurrent headaches (Apples & Mulder, 1989, van Diest & Appels, 1991; Schaufeli & Greenglass, 2001). Several studies show that burnout has been linked to some negative organizational outcomes, including increased turnover and absenteeism, lower organizational commitment and productivity, and self-reported use of violence (Cordes, & Dougherty, 1993; Lee & Ashforth, 1996; Parker & Kulik, 1995; Kop, Euwema, & Schaufeli, 1999). It has been also stressed, that the adverse organizational conditions are more significant in the aetiology of burnout than personality factors, like negative affectivity or low self-esteem (Shirom, 2002).

Given these negative outcomes of burnout, it is not surprising that a number of interventions to combat this dangerous syndrome have been developed. However, most of the burnout interventions reported in the literature are individual-oriented. They usually combine various methods such as cognitive stress management, time management, and social skills management.

West, Horan and Games (1984) used three kinds of stress management approaches for women from various helping professions and found that stress inoculation training decreased Burnout (emotional exhaustion and reduced personal accomplishment), anxiety and systolic blood pressure. Corcoran and Bryce (1983) showed positive effects of a 4-weeks interpersonal skills and rational emotive therapy training on levels of emotional exhaustion of social workers. In the study of Higgins (1986) a cognitive behavioural program including assertiveness training turned out to be effective in lowering emotional exhaustion in working women. Schaufeli (1995) showed a decrease in levels emotional exhaustion for community nurses after they had completed a 3-day burnout workshop that included relaxation, interpersonal skills training and some cognitive elements. Additionally, Rowe (2000) found that emotional exhaustion decreased and personal accomplishment increased at a 2-month follow-up after a coping skills training program. Van Dierendonck, Schaufeli and Buunk (1998) proved that a 5-week intervention aimed at reducing perceptions of organizational inequity had helped to reduce burnout, absenteeism and diminish the deprived feelings in health care professionals. Freedy and Hobfoll (1994) found a significant reduction in emotional exhaus-

tion in the experimental group of nurses who were taught how to use their social support and individual mastery resources.

However, there are also studies that have failed to reduce burnout or have suffered from methodological limitations such as the lack of control groups (Brown, 1984, Larsen, 1986; Schaufeli, 1995).

7.2 The present study

The aim of this study was to audit the stresses that may lead to workplace burnout in teachers and to develop an intervention focused at ameliorating their coping with these stresses. The instrument for stress monitoring based on Karasek's model of job stress was used in the study (Widerszal-Bazyl & Cieślak, 2000). The broadened version of this model (Karasek & Theorell, 1990) differentiates between the three key work dimensions: demands, control, and social support and looks for the determinants of workers' health and motivation in the interaction of these characteristics. According to this model, a situation of high demands, low control and low social support is viewed as stressful for a worker. A large number of studies examining Karasek's model show that although its basic assumption of international impact of the abovementioned job characteristics on health and well-being still remains a matter of discussion, the linear relations between demands, control, social support and health are commonly found (De Jonge, & Kompier, 1997; Van der Doef & Maes, 1999).

In the present study changes in teachers' perception of job stress (namely, the three job characteristics), and burnout symptoms due to the intervention focused at enhancing coping with the teachers' job stresses were examined. During the pre-intervention tests (T1), the high scores in job demands (related to workload and intellectual demands) and the very low level of job control) were observed in the studied group of teachers. The outcome concerning social support has reached an average level.

It was hypothesized that the teachers' perception of these job characteristics would improve, as well as the burnout symptoms would be reduced due to the intervention.

7.3 Method

Measures

Demographic variables included age, gender, years of experience

Teacher's stress was assessed using Psychosocial Working Conditions Questionnaire (31). This is a 36 item questionnaire with the 5 subscales, of which three were used in the study: 1. Demands Scale including: intellectual demands, psychosocial demands, and demands resulting from overload, and role conflict. 2. Control Scale including: behavioural and cognitive control. 3. Social Support Scale including: support from superiors and support from co-workers. Each subscale was scored on a 5-point Likert's scale (0- to no extent, 6- to a great extent). The Cronbach's alpha internal consistency coefficient for the Demand Scale was $\alpha=.79$ (T1), and $\alpha=.81$ (T2), for the Control Scale was $\alpha=.83$ (T1), and $\alpha=.81$ (T2), and for the Social Support Scale was $\alpha=.96$ (T1), and $\alpha=.92$ (T2),

Job burnout. The Polish adaptation of MBI scale (Maslach & Jackson, 1981) was used to assess occupational burnout (Koniarek, 1992). It consists of 22 statements measuring: emotional exhaustion (9 items), personal accomplishment (8 items) and depersonalization (5 items). The frequency of burnout symptoms was taken into account, the items were rated on a 6-point scale (from 0-never to 6-every day). High scores of emotional exhaustion, and depersonalization and low scores of personal accomplishment

were indicative for burnout. The Cronbach's alpha internal consistency coefficient for emotional exhaustion was $\alpha=.80$ (T1), and $\alpha=.79$ (T2), for personal accomplishment was $\alpha=.76$ (T1), and $\alpha=.78$ (T2), and for depersonalization was $\alpha=.57$ (T1), and $\alpha=.58$ (T2).

Participants and design

After completion of the Psychosocial Working Conditions Questionnaire and the MBI at Time 1, participants were randomly assigned to either control or to a treatment condition. Using independent-sample t-tests, the treatment and the control groups were compared on demographic and dependent variables, and no significant differences were found. One participant from the treatment group has not completed the intervention. A month after the intervention has ended the post-treatment measure (T2) was taken in both the experimental and the control group. In order to maintain the equal number of participants in the study groups, the outcomes of one participant from the control group have been randomly excluded (Brzeziński, 2000).

The final experimental and the control group consisted of 29 teachers each. Overall, 58 female and male were included. The mean age was 41.8 (SD=7.1), and on the average they had 18.3 (SD=4.9) years of work experience. Most were women – 69.8%, male teachers constituted 30.2% of the group.

The Intervention Program

The participants from the experimental group were given 2 days stress management workshop lasting for 12 hours. The treatment was aimed at improving coping with stresses related to high job demands (particularly the demands resulting from overload, and intellectual demands) and to a very low job control. The first main goal of the programme was to teach participants how to avoid workloads. The exercises of time management, setting general (priorities) and specific goals of their work were introduced in the workshop. The participants were also taught a more realistic professional role. Through some cognitive restructuring they tried to avoid perfectionism, and to change some dysfunctional beliefs like “I can not fail”, “I have to know everything”. On the other hand, they were encouraged to take opportunities for an additional, professional training and to seek some professional help from the co-workers. To better handle the strain of working, some exercises of relaxation and distraction were introduced in the program.

The second main goal of the intervention was to teach participants how to increase their sense of job control through some useful interpersonal and communication skills, including assertiveness. An example would be having teachers learn and experiment with skills to cope with disruptive student's behaviours, like overt and passive aggression. On the other hand, some exercises of negotiating, and presenting a respectful attitude toward students were also introduced. In order to enhance self-efficacy and a sense of self-mastery, the participants were encouraged to identify all the positive meanings of their work. They were also taught how to benefit from the peer-support through counselling, discussing the “difficult” cases and also through gaining some emotional support from their close ones.

7.4 Results

Means and standard deviations of the outcome measures in the experimental and in the control group are presented in Table 1. Independent-sample t-tests did not show any significant differences between these groups in the pre-test scores of job stress and burnout, nor did the groups differ in age, gender, and job tenure.

Following the guidelines of Bunce and Stephenson (2000), a repeated measures MANOVA (the Wilk's criterion) were used as the most appropriate method for examining, whether there would be any effect to changes in the study variables. In MANOVA analysis *Time* was the within-subject variable, and the *Intervention* (1-intervention, 2-nonintervention) was the between-subject variable. Table 1 includes means, standard deviations of the outcome measures in and MANOVA's effects with and the size of these effects.

Table 1 Descriptive Statistics of Pretest and Posttest Scores of the Study Variables, and MANOVA Involving Time x Intervention Effects

Variable	Experimental group N=29		Control group N=29		MANOVA		
	T1	T2	T1	T2	F	p	η^2
Intellectual demands					F(1,56)=4.34	.042	.072
M	34.59	31.72	35.20	35.29			
SD	4.25	5.70	3.59	4.19			
Psychological demands					F(1,56)=1.72	.19	.030
M	33.94	32.89	34.35	34.85			
SD	4.04	5.39	3.86	4.06			
Overload and role conflict					F(1,56)=6.47	.014	.104
M	15.69	13.24	17.62	17.91			
SD	3.79	3.32	2.93	3.03			
Cognitive control					F(1,56)=1.13	.29	.021
M	36.01	35.61	34.92	35.03			
SD	3.45	3.85	4.34	3.84			
Behavioural control					F(1,56)=28.88	.000	.324
M	28.06	31.89	29.55	30.05			
SD	4.89	4.52	5.81	4.91			
Support from supervisors					F(1,56)=.419	.52	.008
M	25.13	26.62	24.89	24.09			
SD	5.71	7.47	7.06	6.42			
Support from co-workers					F(1,56)=.98	.32	.018
M	26.37	25.26	25.20	24.82			
SD	5.44	6.47	6.29	6.19			
Emotional exhaustion					F(1,56)=9.47	.003	.152
M	26.37	25.06	25.20	25.21			
SD	5.44	6.47	6.29	6.13			
Personal accomplishment					F(1,56)=.262	.616	.005
M	12.76	10.96	12.31	12.02			
SD	1.74	1.45	1.83	1.75			
Depersonalization					F(1,56)=.006	.937	.000
M	12.38	12.73	12.03	11.98			
SD	1.14	.77	1.40	1.02			

A repeated measures MANOVA showed a significant effect of Time and Intervention interaction on four of eight variables included in the analysis that are on intellectual demands, overload, behavioural control, and emotional exhaustion (Table 1). The greatest effect was observed with regard to behavioural control. The perception of organizational stress related to intellectual demands, overload decreased also significantly in the experimental group.

Among burnout dimensions, the only emotional exhaustion has been significantly reduced due to an intervention, but this effect was substantially great in comparison to

the other effects of the intervention (Table 1). No significant changes as a result of participating in the intervention were found for the perception of social support, from both supervisors and co-workers. The treatment had neither effect on personal accomplishment nor on depersonalization.

7.5 Discussion

The study confirmed the previous findings that emotional exhaustion is the easiest symptom to reduce by various interventions (Corcoran, & Bryce, 1983; Higgins, 1986; Schaufeli, 1995; Van Dierendronck et al., 1998; Freedy & Hobfoll, 1994). The intervention program did not affect depersonalization or professional efficacy. These burnout dimensions are always more difficult to change by intervention. The reason of not obtaining any significant changes in these burnout symptoms could be a too short period of the treatment.

However, the surprisingly great effect of the intervention concerned the perceived behavioural job control. Although somewhat smaller, but significant effects of intervention on perceived workload and intellectual demands were also observed. It is supposed that the cognitive and behavioural exercises introduced in the intervention could substantially help teachers to increase their authority to make decisions on their job, to better regulate their workloads and to meet the intellectual demands of their work. Finally it could also facilitate lowering teachers' emotional exhaustion. It was proved that the environmental sense of control is an important stress management resource. Brouwers and Tomic (2000) have also showed that interventions that incorporate mastery experiences were likely to reduce teachers' emotional exhaustion. A similar outcome concerning increased job control was obtained in the study of Hatinen, Kinnunen, Pekkonen and Aro (2004) due to a 2 weeks rehabilitation program aimed at enhancing the individual coping resources.

Encouraging teachers to use active, non-withdrawal coping and respectful, but assertive attitudes toward their students was a very important part of the intervention. Bakker and his colleagues (Bakker, Schaufeli, Sixma, Bosveld, & Van Dierendronck, 2000) suggests on the basis of their study, that a positive, active attitude toward one's recipients could reinforce their positive, reciprocal behaviours.

Although the intervention was not aimed at any objective manipulation of job conditions, it had beneficial effects on the perception of job control and job demands. Perhaps, the greater changes in all burnout symptoms could occur in this study if the intervention would focus more on changing the situational and organizational factors that may play a greater role in the development of burnout than the individual ones (Maslach, et al., 2001). Metaanalysis of work stress and burnout interventions suggest that individually oriented interventions do not take sufficient actions to prevent the causes of burnout development (Burke & Richardsen, 2000). Nevertheless, in this study, a burnout symptom, and the two stressful job characteristics decreased significantly regardless the fact that no such actions were taken. The future research should focus on developing an intervention that combines both individual (coping skills) and organizational work factors to reduce work related burnout.

The limitations of the present study are that no objective measures, like absenteeism or turnover were included, and no follow-up measure was taken to check the stability and duration of the observed outcomes.

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8 INRS (France)

Organizational interventions and prevention of psychosocial risks: Presentation of some French approaches

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Abstract

This paper presents some French approaches of organisational interventions to combat stress at work. First, it describes two activity-centred approaches which seem to be specific to the French language context: work psychodynamics approach and ergonomics approach. Secondly, it briefly presents three case studies of ergonomics interventions conducted by INRS to improve working conditions; each of them develops a specific way for approaching psychosocial problems at work (a) use of the WOCCQ questionnaire to give an accurate diagnosis to the stakeholders, (b) implementation of a collective action by way of a steering group, (c) use of a specific method to evaluate emotions in the workplace and to analyse workers activities. Finally, what has been learned from these case studies is that identification of the stressors is not enough to give way to preventive actions in the long run. More research is necessary concerning the following steps (decision, implementation and evaluation of concrete actions) of a successful preventive process.

8.1 Introduction

The second meeting of the PEROSH⁹ pillar group will focus on “organisational interventions and measures to combat the psychosocial effects of stress”. The purpose of this paper is to enable the other participants to get some idea of: (a) what kind of approaches are used in France, (b) what measures are applied and their main incentives, (c) what the first results of these measures have been.

Firstly, the overall picture shows that the three levels of Murphy’s classification of practical prevention interventions and measures are being covered in France: primary level (stressor reduction), secondary level (worker training – health promotion or psychological skills) and tertiary level (employee assistance). It also clearly emerges that although most of the practical interventions in the workplace are still second and third level interventions, French prevention specialists do aim systematically to promote primary level interventions by improving working conditions and work organisation.

A brief description of the “institutional” context may be necessary to understand certain specific feature of the French prevention context. From an institutional point of view, several bodies are directly concerned with a view to improving organisational intervention to combat psychosocial risks: INRS¹⁰, CRAMs¹¹, the ANACT¹² network and a few associations of occupational physicians, but also CE.RE.S.T.E¹³, LPTA¹⁴,

⁹ PEROSH stands for Partnership For European Research in Occupational Health.

¹⁰ INRS is the French Institute of Research and Safety (<http://www.inrs.fr>).

¹¹ The CRAMs are the Regional Health Insurance Funds (there are 16 in France).

¹² ANACT is the National Agency for the Improvement of Working Conditions (<http://www.anact.fr>).

¹³ CE.RE.S.T.E is the CEnter of REsearch for Health-Work-Ergonomics (University of Lille II, <http://www.chru-lille.fr>).

¹⁴ LPTA is the Laboratory of Work and Action Psychology (Conservatoire National des Arts et Métiers in Paris, <http://www.cnam.fr>).

and LATTS¹⁵ from the general education and research public institution. Despite important differences (in relation to their links with Social Security Institutions or Public Authorities, their missions and the sectors they cover¹⁶) all these bodies have much in common: firstly to combat stress from an organisational angle, and secondly to use certain theoretical frameworks and methods. This enables them to develop associations and partnerships to tackle practical issues at individual company level: for example, INRS operates via the CRAM network. Its research and studies for workplace intervention always answer a need expressed by both the social security bodies and a specific company (more precisely, the company manager, CHSCT⁸, the occupational physician, etc.).

At the present time in the French legislation, there is nothing specific directly linked to stress prevention. However, since 31 December 1991 and following incorporation of Framework Directive No 89/391 into French law, employers are required to take all necessary measures to guarantee the physical and mental health of employees and to undertake actions on the main sources of risks. In addition, creating and updating a specific document related to an overall risk prevention approach to occupational safety and health problems are now legal obligations for employers in France (application measures No 2001-10 of 5 November 2001). The form and contents of this document have been laid down even more recently (18 April 2002) by the Ministry in charge of Labour in a “Circulaire d’application”, where stress and psychosocial risks are mentioned several times. So far however, despite this general framework promoting stress prevention, it is not often complied with. In this respect, prevention culture in French companies, still has to be modified.

This paper is divided into three parts: firstly, it describes the main relevant approaches being used at national level by prevention professionals and institutions (both the theoretical framework and the intervention processes); secondly, it briefly presents two case studies of interventions conducted by INRS in relation to stress at work as well as some comments on their results; finally, what has been learned from this work and the orientations of the future INRS research and study activities are reviewed.

8.2 Approaches being used in France

Most of the French institutions concerned by occupational stress prevention refer to the following definition, from the European Agency for Safety and Health at Work: “The experience of stress arises from an imbalance between the perceived demands of the environment and the perceived resources available to the individual to cope with those demands. Although the process of evaluating both demands and resources (“appraisal”) is psychological, the effects of stress are not just psychological in nature, but also affect people’s physical health, well-being and productivity.”

From a theoretical and methodological point of view, two main kinds of approaches are currently being used in France: (a) theoretical stress models (Karasek & Theorell, 1990; Lazarus & Folkman, 1984; Siegrist, 1996) and (b) activity centred approaches,

¹⁵ LATTS is a Laboratory of the French Centre of Scientific Research working on the interaction between Technologies, Territories and Societies (<http://www.enpc.fr/edve/formation/laboratoires/latts.html>)

¹⁶ INRS is a technical and scientific resource within the French General Social Security Institution (occupational safety and health sector). Besides its research and studies activities, INRS also provides assistance, information and training to professionals in charge of prevention: company managers, occupational physicians, CHSCTs (French Health, Safety and Working conditions Committees), workers, etc.

related to “Work psychodynamics” on the one hand and “Ergonomics” on the other. In this paper, only the second kind of approach, very specific to the French language context, will be covered.

8.2.1 *Work psychodynamics approach*

“Work psychodynamics” proposes a conceptual framework (aimed at occupational physicians, occupational psychologists and ergonomists), which explains the links between the mental health of employees and work organisation. It develops a comprehensive approach to those people at work who are suffering but still working. This approach is based on three questions: “How do they cope with doing such pathogenic work?”, “Why aren’t they ill?” and “What expectations do they have of work? ?”. (Dejours, 1993)¹⁷ tried to answer them, providing also a model of organisational intervention.

Conceptual framework

Stress theories question only the links between causes and symptoms. They never consider the subjective dimensions of the difficulties and complexity of work for people. In contrast, the subjective interaction between people and their work is the centre of attention in work psychodynamics. The psychic mechanisms involved in this interaction are taken into account. So, instead of “stress”, work psychodynamics uses the concept “suffering”, giving to it a wider meaning.

Mental health at work is based on three needs:

- satisfaction of personal ambitions;
- development of creativity;
- social recognition for what people put into their work: intelligence, effort, “suffering” or well-being at work.

The fact is that work organisation limits the possibilities of fully satisfying these needs. And it is precisely when people can overcome these constraints that identity emerges from working life. As Dejours said: “*The recognition which people find in work transforms the suffering of work into pleasure because it enables them to be self-fulfilled*”. This requires a work organisation which allows a certain degree of autonomy. Some characteristics of organisation (work overload or underload, high time pressure, paradoxical demands, lack of co-operation, etc.) prevent people from adequately accomplishing their task and ruin the process of recognition. So, people lose the meaning of their work and for them begins “*suffering and the struggle against it*”(Dejours, 1993).

Workers mobilise various individual and collective defence mechanisms (denial, cynicism, derision, etc.) to struggle against psychic suffering and carry on working. This process may be quite efficient but it is always extremely costly for people’s psychological balance. When it reaches its limits, then come isolation, violence, errors, accidents, and any kind of physical or psychological “de-compensation” (psycho-somatic diseases, nervous breakdown, drug use, etc.).

Organisational intervention

An employees’ request (passed on by an occupational physician, union representatives, etc.) is an essential condition for starting a psychodynamics intervention. The origin of the request is the observation or anticipation of symptoms of dysfunctions (episodes of verbal violence, suicide, etc.). The intervention is generally carried out by at least two qualified external consultants. A homogenous group of volunteer workers is consti-

¹⁷ Christophe Dejours is the Research Director of LPTA.

tuted to analyse collectively their working experience and identify the organisational origins of their suffering. The principles of the method are “risky speech” (accepting to say what they really think and do) and “risky hearing” (accepting to hear and understand what they were not expecting at first). So, nothing can be said outside before the end of the process.

Two main stages are distinguished: the first is composed of a request analysis (related to history of the company, work content, social stakes, workers involved) and information meetings (related to theoretical concepts, approach contents, methods); the second aims at the collective elucidation of the relationships between work organisation and suffering (by examining the various contradictions, paradoxes, incompatibilities of the situation). With this step, what is clearly aimed at is not an objective description but workers opinions (subjective explanations and interpretations) on facts at the origin of the request. This is an interactive construction between the workers and the consultants. What is important is that, through this process, workers can again find the meaning of their action and ultimately the meaning of their work. Four or five meetings are generally necessary. This explains why the intervention can last several months. A report is written based on what has been discussed during the meetings. It is then submitted to the members of the group for discussing and drafting into a final consensual version. It is up to the group whether to disseminate it or not.

8.2.2 *Ergonomics approach*

The ergonomics approach¹⁸ has the clearly-stated objective of changing the work situation rather than the characteristics of the workers. This is achieved not by the application of some general top-down recommendations, but through a more precise, contextual, bottom-up analysis of the way workers actually cope with existing situations. Activity analysis is the basis of the approach. This is a framework common to various prevention professionals (ergonomists, occupational physicians, occupational psychologists, etc.).

Conceptual framework

The approach insists on the important differences between “task” and “activity”. Task is defined as a rather theoretical representation of what is to be done, in relation to precise conditions defined in advance (objectives, organisational dimensions of work, physical environment, etc.). Activity is what is done by workers facing variations in task demands in a real environment. So, activity is a complex association of representing, adjusting, acting, etc. (Vaxevanoglou, 1999)¹⁹.

It is also the essential way to understand what is really going on in a particular work situation and to explain the positive or negative effects on workers and companies. Stress is the result of activity performed in “getting out of hand” situations, which are characterized by high, durable and intensive demands. Workers might experience negative outcomes (stress, emotional work load, MSD, accidents) because they are not able to meet their objectives.

Therefore, the ergonomics approach gives a dynamic, systemic, global point of view on the work context. It does not provide a model of stress but an explicative framework for intervention on stress at work.

¹⁸ This paper will present the ergonomics approach called “Francophone ergonomics” which is dominant in France (<http://www.ergonomie-self.org>).

¹⁹ Xenophon Vaxevanoglou is member of CERESTE.

Organisational intervention

Intervention is structured as a project of transformation of the work situation. A diversity of actors of the company are systematically involved in the process. Since the analysis is primarily focused on the workers and their activity, it is essential that the workers are voluntarily involved in the project and that the company gives the necessary resources.

Ergonomists do insist on the importance of the very first stage of the intervention called the “request analysis.” *The underlying idea is that ergonomics has to construct the problem before solving it in order to establish priorities in the risk assessment*”. This leads to a reformulation of the request in a broader, often different perspective which is submitted to the parties (Desnoyers & Daniellou, 2004).

Ergonomists thus make an initial diagnosis with contextual data (work organisation, workers skills and experience, tasks, work processes and results) from interviews, general observations and document analyses. They elaborate an operational hypothesis on the links between work conditions, activity and safety and health effects. Then, they carry out a work analysis by means of systematic field observation of work activity, interviews with workers and questionnaires intended to assess working conditions and effects. The choice of tools is dependant on the nature of the problem to be investigated, the work content and the conditions of the study. One important interest of such an analysis reveals divergences whether they concern points of view, modes of action, practical incentives and contrasts them with the negative outcomes for the workers.

The analysis of the results leads to a diagnosis which is discussed within the steering group and to the development of proposals for improving well-being, health and production at work.

In conclusion, these two French organisational intervention approaches are worker activity centred and they differ in the nature of the data collected: mainly subjective for the first, subjective and objective for the second. Consequently, psychodynamics never conducts systematic field observation of work activity. A confidential report is written in both cases, but in the first case it is up to the investigation group to decide its dissemination conditions, whereas in the second case it is up to the company.

8.3 INRS studies on stress at work

Since 1998, several research studies have been conducted at INRS, addressing stress at work from various complementary points of view²⁰. Two kinds of studies can be distinguished: firstly, those (e.g. epidemiological²¹ and economical²² ones) which rely essentially on externally collected data (on a large scale), and secondly, those which are actually field studies (e.g. psychological and ergonomic²³) developing locally a general approach to organisational intervention to curatively combat stress while conducting research on a more specific dimension of a method or tool. Three case studies of the second kind will be summarized below. The first concerns a study carried out on

²⁰ In addition, a multidisciplinary project is developing practical methods and tools to objectively examine situations of stress and prevention strategies for prevention specialists in the field.

²¹ Two epidemiological studies aim at quantifying the links between health and constraint factors in professional sectors: printing works (Chouanière, 2002) and call centres (in progress).

²² An economic study relative to the cost of stress was performed with national statistical data (Bejean, Sultan-Taïeb, & Trontin, 2004).

²³ For example, Grosjean & Van de Weerd, (2004) are presently conducting field research focusing on emotional and cognitive processes in a call centre.

a methodological approach to stress / work conditions assessment. The second is a field intervention motivated by an episode of physical violence between workers. The third is related to the use of a specific method to evaluate emotions in the workplace and to analyse workers activities.

8.3.1 *Development of a method to diagnose stress at work*

Following several requests from prevention professionals concerning stress and work conditions questionnaires, INRS undertook a research project structured around two different questions: “What kinds of questionnaires are available in the French language?” and “What are the optimal conditions for their use in a company?”.

Conceptual framework

The EPAP laboratory²⁴ has selected the WOCCQ²⁵ which relies on the following idea: when workers do not have control of the situation, they feel stressed. It was built on the (Mackay & Cooper, 1987) model of stress (1987), derived from the transactional model of (Lazarus & Folkman, 1984) for work situations.

The questionnaire is composed of three parts: (a) an 80-item questionnaire concerning control of work conditions (WOCCQ), (b) a 25-item questionnaire for assessing psychological stress (MSP)²⁶, and (c) an open question inviting the subject to relate three concrete getting out of hand situations encountered by him (her) during work.

What makes this questionnaire interesting is its broad approach to the work context. For example, it includes questions on environment such as physical exposures (high level of noise, temperature, etc.).

Diagnosis approach

A similar approach was used in three companies: a public administration, a private credit company and an air transportation company. Each study was conducted by a team of two INRS researchers. The intervention process was intended to apply the principles of the Framework Directive, and more precisely to ensure that the risk assessment process, under the responsibility of the company manager, was conducted by the company itself and not completely entrusted to external consultants. Consequently, the aim of the intervention was to help the company elaborate an accurate and scientifically valid diagnosis that would constitute the solid basis necessary for it to find improvement solutions.

The approach was composed of four stages:

- information and coordination: request analysis, reformulation of the request and elaboration of a schedule of conditions, constitution of a steering group (including the CHSCT and some workers of the departments) and presentation of the project to all the employees;
- pre-diagnosis consisting in collecting data on the company, work conditions, difficulties encountered by workers, identification of the highly-demanding departments, etc. through interviews and analysis of documents;
- distribution by the steering group of the complete WOCCQ and MSP questionnaires, to be completed and directly returned to INRS;
- feedback of the results to the company: a report which could be disseminated inside the company and an oral presentation leading to wide-ranging discussions

²⁴ EPAP is the INRS laboratory of Ergonomics and Psychology Applied to Prevention.

²⁵ WOCCQ (Working Conditions and Control Questionnaire) was constructed by the department of Work Psychology of the University of Liege in Belgium (Hansez, 2002).

²⁶ MSP : Measurement of stress built by (Lemyre & Teissier, 1988) in Canada.

with the steering group. If the results of the intervention obtain a clear consensus on the accuracy of the resulting description (main difficulties and possible organisational and psychosocial sources)²⁷, this consensus yet constitutes an important aspect.

What could be learned from this case study

From a strictly scientific point of view, this case study leads to a consistent and accurate diagnosis of stress levels and stressors within the companies, based on comparing of data of a distinct nature (for example: absenteeism - concrete getting out of hand situations - subjective information). The approach allowed triangulation of the data promoted by Cox & al. (2000) which simultaneously yields and validates the data. In addition, quantification is always well perceived by the actors of the companies.

The WOCCQ appears as a relevant tool for an ergonomics approach, in particular for identifying precisely the characteristics of concrete local getting out of hand situations. It allows improvement proposals based on local working conditions rather than general recommendations to be drawn up. In addition, it yields a better understanding of the particularities of each company and of each department and unit within the company. From a more interventional point of view, it appeared later that in two of the case studies, the diagnosis was followed by no practical action or transformation of the work situation. At the present time, it is too early to say anything about the third case study, which is still underway.

8.3.2 *Assistance to CRAM prevention specialists conducting an intervention*

The second case study presented in this paper is a field intervention still in progress. It takes place in a Social Security department which is not linked to INRS. CRAM and INRS decided to deal jointly with the request of this department. This intervention team is composed of two occupational psychologists and an ergonomist.

Initial request

The reasons for the CHSCT request to the CRAM prevention specialists were a series of relational difficulties in a specific unit (episodes of verbal and physical violence). The initial request was worded in terms of “mediation” between the persons in conflict. The CRAM professionals were present at a CHSCT meeting and could hear that there were also some difficulties in other units of the company. So, it was suggested to carry out a diagnosis on the entire company, which was accepted by the top manager.

Methodological orientation

The intervention has been designed as a research action. The conceptual framework underlying this intervention refers to the ergonomics approach presented earlier. In agreement with the top manager and the CHSCT, a steering group was created. This includes some members of the CHSCT, the occupational physician, and a staff manager.

The setting up of this steering group is a crucial point of the intervention. It was clearly established that the purpose of the steering group is not to deal directly with crisis situations. Its missions and operating rules are: (1) to identify risk situations for mental health; (2) to analyse causes in order to suggest improvements; (3) to help to carry out the prevention actions decided; (4) to inform all employees of the progress of the project.

²⁷ Usually, researchers try to keep contact with key actors (for example from the CRAMs) and get some information on what happened after their intervention, in particular the results in terms of changes to working conditions.

This framework obviously implies training of the steering group, and therefore it cannot be operational immediately. Nevertheless, the existence of such a group seems indispensable for two main reasons. First, if we want the intervention to go on after withdrawal of the external professionals (CRAM and INRS), it is necessary to transfer an appropriate methodology and certain conceptual keys. Second, the steering group knows the company better than these external professionals, hence the suggestions for improvement would better fit the reality of the situations with the active participation of this group.

Stages of the intervention

- Request analysis, reformulation, constitution of the steering group;
- Pre-diagnosis with the steering group, which emphasises the need to start the intervention by meeting the different managers of the company;
- Interviews with all the managers and collective presentation of the interviews analysed;
- Unit-by-unit investigation through collective interviews with the staff, written feedback to the staff first and then to the manager. If necessary, the latter can meet the top manager to discuss the analysis and try to design ways of improvement;
- Global analysis of the different investigations with the steering group in order to highlight common points and divergences.

Throughout the intervention, the steering group is trained as explained above.

What could be learned from this case study?

For the INRS and CRAM professionals, the interest of this research action is to validate a prevention approach which leaves enough room for the participation of both the steering group and the employees in order to construct adequate improvement proposals. The ultimate aim is to ensure that the company is better able to deal with the psychosocial risks on its own, the challenge being to find a balance between the participation of the actors and the approach of the experts.

8.3.3 *Psycho-ergonomic research on stress and emotions in the workplace*

The third case study is linked to psycho-ergonomic research on stress and emotions in the workplace. This research tries to analyse the affective aspects of different working situations to understand the relationship between cognition and emotion, with regards to stress at work. The aim is to study how the emotions felt by a person at work can influence her/his cognitive process. In contrast, how occupational cognition (e.g. cognitive evaluation) involves the emotions also falls within the scope of this research. The main purpose of this approach is to evaluate the emotional part of work and the worker' activity, with a view to proposing specific recommendations to improve working conditions and to prevent stress at work.

Theoretical framework and case study context

The neurophysiologist studies carried out by Damasio (1994, 1999) have demonstrated that the role of emotion on global cognitive performance is not only negative. On the contrary, emotion is an essential element of the decision making process in complex situations. However, only few research efforts have been invested on the topic of emotion and emotional factors in the workplace. The vast majority involve laboratory experiments with no links with real working situations. The number of work situations where workers have to face high psycho-affective demands is increasing (service sector, public relations and assistance, etc.). This on-going research proposes characterizing the psycho-affective dimensions of highly-demanding situations and relies on ergonomics interventions in the workplace. The following case study is related to an in-

vestigation in a call centre. Emotional demands of the job are considerable in call-centres, and could play a prominent role in the strenuousness of this sector (Zapf, 2002).

Methodology

The intervention was carried out in two contrasted sectors of consumer credit company call centre. A comparative approach to these sectors, each with quite different tasks, was adopted. The intervention relied on ergonomics methods, adapted to the working situations (interviews, observations, video recording of worker's activity, verbal explanation after activity observation...) and on specific tools (emotional scale...) developed in order to collect the emotional and cognitive data.

The first step of the analysis aimed at characterizing the work organisation and the workers' tasks contents in the two sectors, through interviews and observations at the workplace.

In order to gather data on the emotions felt and the activity, specific interviews were conducted: the worker was confronted to the record of a sequence of her/his activity, and asked to state the nature and intensity of her/his emotions related to each phase of the specific situation. By using this method, various contexts leading up to the negative, positive and neutral emotions could be identified, for each the two sectors. A scale of emotional involvement was also used during these interviews to determine the intensity of the emotions expressed by workers. Eight workers were interviewed (four in each sector) and the duration of the recorded sequences varied between 30 and 50 minutes.

Finally, an other set of interviews was conducted to collect the workers' subjective appraisal concerning their tasks contents and their working conditions. The workers were also asked to justify the strategies they used to accomplish their activities. This was aimed at trying to bridge the gap between: on one hand, the day-to-day emotional effects of the working situation on the workers and on the other hand, the longer-term effects on motivation, performance and well-being.

Main results of the case study

In the first sector, the workers have to deal with the incoming calls of potential customers, interested in the products of the company. They receive calls during most of their time at work. Interaction with clients is short and fast, with very little variety.

In the other sector, the operators must contact customers who have not respected their financial commitments and try to persuade them (by various means) to restart their payments. They spend less time on line and the duration of the calls is longer. The emotional register to be used is broad (threat, invocation of moral sense, etc.) and should be adapted to the social and moral situation of the customer. The workers must be creative, even if they have frequently to deal with difficult situations.

Negative emotions appear in the first sector when workers encounter situations that delay the accomplishment of the task at hand and the achievement of goals might be hindered. In the other sector, they are related to the presence of direct managerial control. Interviews confirmed that the coping strategies of the workers in the first sector are oriented towards fast achievement of the expected results. These strategies result in a certain feeling of temporal control in an environment where the temporal constraints are high. These coping strategies are not present in the other sector, where the main stressors are linked to the level of managerial control.

What could be learned from this case study?

Differences in the nature of the tasks should be systematically taken into consideration to understand the way people cope with high demands, strict and continuous control of productivity, and customer relation requirements. This empirical study also showed

that management style can be a real source of stress for workers who need to be creative in their job to achieve the tasks at hand. It appears clearly that the emotional load is easier to be managed by the workers when they have a degree of autonomy. Therefore, in this particular case, ergonomic recommendations were especially directed towards organisational choices more in tune with the nature of the tasks.

8.4 How can we progress?

Among the lessons which could be learned from these studies, the following three could be of interest for the discussion within the PEROSH group:

- the need to perform an accurate diagnosis to determine the extent of the problem for employees, to identify the stressors and to orientate towards organisational and working conditions improvement solutions;
- the interest of a participatory approach, especially through a steering group that knows the company well and is trained in the approach. This is useful in terms of practical execution of the diagnosis and informing the salaries, etc., but also in terms of appropriation of the results and the method in order to stay alert in the future. This latter aspect appears essential for prevention.
- unfortunately, prevention professionals have also observed in a number of cases here and there that even when the diagnosis stage has been performed correctly, it is sometimes not followed up by decisions and preventive actions.

This latter observation raises several series of questions which seem to be shared by some other research teams (cf. for example, the document of the Service Public Fédéral Emploi, 2004).

Why does the diagnosis sometimes seem to “close the door” to taking prevention measures? What are the obstacles? Is it only a question of resources, tools or methods? And what are the effects on the employees of an intervention which points out problems and risks for their health without resulting in preventive and curative measures? When it does not lead to actions, is performing a diagnosis not more hazardous than doing nothing?

How can it be explained that the company is so reluctant to pursue a preventive approach? Is it more generally a question of changing the prevention culture from a technical point of view to a wider one, including psychosocial dimensions of work and risks. Is it a question of incentives? What about the limits of the commitment of the company to the process of combating risk, and in particular stress risk, at an organisational level? How can we assess this commitment? We must take into account the fact that, in France, psychosocial risks are not really recognized as a problem within companies, in particular in small companies where it is not easy to integrate this risk into a real preventive policy. Any of these different aspects could be addressed jointly through the PEROSH group.

In order to overcome these obstacles, INRS is currently considering a new orientation: field research focused on “good practices” within a voluntary company would provide a description and thus a better understanding of an efficient prevention policy (in the entire company or in a department). This could be a source of good examples for others companies: the ultimate aim is well-being at work rather than reduction of the level of risks.

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9 INSHT (Spain)

Psychosocial interventions: The Spanish experience

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Abstract

INSHT presents two projects related to psychosocial interventions: 1. New forms of work organisation as a way to improve worker's satisfaction at work. The main findings were: decision to change is taken by management; improvement of worker's health is not the main reason to change; the degree of worker's participation differs between companies; 2. Intervention experiences. Our purpose is to collect and analyse experiences and to present models for the intervention and improvement of psychosocial factors. We are going to classify the interventions into primary actions, secondary actions and tertiary actions. At the present we have collected about fifteen experiences (counselling, rotation, tasks enlargement, conciliation measures, etc.) among different economical activities.

9.1 Background

The INSHT as Organism related to risk at work prevention had been paying attention to the Psychosocial factors since the early eighties. They have been regarded as "working conditions": work factors that can influence positively or negatively worker's health. So the INSHT has given them the same consideration as other risk factors and had included them in its activities:

- Investigation: Some specific studies have been carried out in these years: health care workers, non university teachers, customers attendance. The Spanish Surveys on working conditions include several items related to these psychosocial factors. (Five surveys have been carried out, the first one in 1987 the last one in 2003)
- Development of methodologies for the assessment of this kind of risks.
- Giving advise to employers and employees
- Training

We started from a theoretical point of view based on:

- the ILO/WHO report: Psychosocial factors at work. (ILO/WHO Joint Committee. 1986)
- the WHO definition of health: *Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity*
- Satisfaction and stress theories.

Nowadays the Spanish regulation on Safety and health at work defines working conditions as *whatever work characteristic which can influence safety and health worker's risks.*

Our conceptual basis lies on stress theories and in the concept of interaction between work demands and individual perception of the situation and on the worker's response or coping capacity.

When we developed the methodology for the evaluation of psychosocial factors (it was published in 1995) we defined them as those conditions present at work which are di-

rectly related to work's organisation and content, to work execution and which can affect work as well as worker's health, (at physical, psychical or social level).

One definition (not the only one) which match nowadays with our point of view is the definition of psychosocial hazards suggested by the European Agency for Safety and Health at Work (from T. Cox et al.): *those aspects of the design, organisation and management of work, and its social environmental context, which can cause psychological, social or physical harm.*

One of the main functions of the INSHT is giving advice to employers, employees, safety and health professionals about how to improve working conditions in order to prevent health damage.

The improvement of psychosocial factors must be based on a correct management that takes into account:

- tasks content, tasks demands
- organisational conditions
- individual capacities (information, training, social support).

Our point of view is that this process must be integrated in the usual activities of the companies within the frame of other general quality policies. Due the kind of factors involved in psychosociology, health and safety services must collaborate with human resources departments.

I would like to stress two projects related with psychosocial intervention: new forms of work organisation and experiences on psychosocial intervention.

9.2 New forms of work organisation

Since the year 1994 the INSHT has been involved in the study of new forms of work organisation as a way of improve worker's satisfaction at work.

To develop this project we did a bibliographic review to know the state of the art in Spain. Later we visited some companies in order to gather information from the field work.

9.2.1 Literature review

From the bibliographic review we could conclude that there is a growing concern within companies for reaching a competitiveness situation in the market and that this is one of the main reasons to introduce changes at work.

The new structures must be characterised by flexibility, efficiency, motivation, information transparency, high investment on people, fluent horizontal communication and low levels of bureaucracy and hierarchy.

However not all forms to reach competitiveness are good for employees, for example downsizing or flexible production.

9.2.2 Company interviews

During 1995 interviews were carried out in ten companies of the area of Barcelona.

The methodology used was a semi-structured interview applied to both manager's and worker's representative in each company. The main findings we found were:

- In the majority of cases the decision to change and the model to be applied is taken by the management.
- The main reasons to change are improve quality, hold deadlines, reduce stock, reduce waste market demands but not to improve worker's health.

- The degree of worker's participation differs between company: in some cases changes are negotiated with trade unions but in other cases is an unidirectional decision.
- The models that have been applied are: quality improvement groups; quality circles; rotation and enrichment; elementary work units, team work; work cells and work modules.
- The majority of companies organised training courses for workers.
- To evaluate the changing results the criteria are: productivity index, absenteeism, worker's performance and motivation, product quality, repairs and rejections.

9.2.3 *Participation in the Innoflex project*

Spain was one of the partners of the Innoflex group. (Innovative firms' performance, internal/external workforce flexibility and personal/social consequences). It was a project financed by the Key Action on Socio-Economic Research within the Fifth Framework Programme of the European Union. The project was formally completed on 31st July 2003.

It was managed by CERRM (Centre Européen de Ressources sur les Reversions et les Mutations) and The Work Institute at The Work Institute.

The objective of this project was to *identify the conditions under which convergence can be achieved between quality of life and business competitiveness through the design and implementation of new forms of work organisation, and to identify means of reproducing these conditions through the actions of public policy makers, social partners and research-based institutions.*

New form of work organisation were studied in the Automobile and in the Hospital sectors. (You can get more information in the Innoflex web: innoflex.org.uk or in the INSHT web: www.mtas.es/insht/research/Innoflex.htm)

9.3 **Intervention experiences.**

In 2000 the INSHT started a project with the objective to collect experiences of psychosocial interventions, even the most simple ones and even if they have been carried out with other objectives than health at work (quality, human resources, social climate, collective agreements...)

Our purpose is:

- to collect and analyse experiences
- to give models for the intervention and improvement of psychosocial factors.

We are going to classify the interventions into:

- primary actions. It will include actions on working conditions, modifying work stressors: changing work methods (introduction of group working work enrichment... working time flexibility, training in managing (leading groups, conflict resolution, supervision strategies...), empowerment or career development programs....
- secondary actions: Measures that include giving workers tools to cope with the situation, changing individual response, control the situation (social support, training in stress coping strategies...)
- tertiary actions: Actions taken to provide assistance to stressed people.

At the present time we have collected about fifteen experiences (see some examples in the Annex. Is to be noticed that in some cases we have not yet the whole information and that is it still a draft document.)

Once we have finished the project we will disseminate the results through the usual means: publications at different level, website, workshops...

Experiences in psychosocial intervention

COMPANY'S ACTIVITY	TARGET GROUP	INTERVENTION	RISK FACTOR	AGENTS
Hospital	All workers	Counselling	Several	Occupational Prevention Service
City Council	Social workers	Rotation	Emotional demands	Management, trade unions
University	All workers	Good practice guidelines and	Psychological harassment	Occupational Prevention Service, trade unions, rectorate
Electronic industry	All workers	Agreement on training, workplace maintenance, salary revision, privacy consideration	Introduction of new computer and communication technologies	Management, worker's representatives
Regional Administration	Teachers	Training in risk prevention, group discussion, coping strategies	several	INSHT, Regional Administration Delegate
Hospital	Auxiliary personnel	Task enlargement, change in working methods, arrangements in workload and shifts	Poor work content, heavy workload, no promotion opportunities	Occupational Health Service, worker's representatives, intermediate management
Elderly home	Nurses, nurses aids	Increasing on human and material resources, role definition, training in coping strategies	Quantitative and qualitative (emotional) job demands, no promotion opportunities, lack of autonomy	Occupational Health Service, worker's representatives, Management
Felt manufacturing	Line workers	Increasing on human resources, workload distribution	Quantitative workload, bad task's distribution, pace of work	Labour court
Supermarket's chain	¿?	Work-life balance measures	Work schedules, workload	Human resources

10 ISPEL (Italy)

Prevention of psycho-social risks in Italy: the “state of the art” today

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Abstract

In 1995 ISPEL guide lines for small and medium sized enterprises to Law No. 626/1994 on improvements in workers’ safety and health in the workplace, together with the risks for worker safety (accidents) and health (related to hygienic and environmental factors), identified the so-called “transversal risks” since they may cause stress and have an impact both on safety (accidents) and health (illnesses).

On March 2002, Law No. 39 made it compulsory for employers to assess all health and safety risks, and also psycho-social risks, considering the constant growth of occupational risk, changing work conditions, and scientific research on occupational risks. Law No. 195/2003, modifying Law No. 626/1994, established that the skills and professional requisites of the heads of internal and external prevention and protection services had to be adequate to the type of work done in that workplace and the type of risks present and that these supervisors must have attended training courses on prevention and protection of risks – including ergonomic and psycho-social risk, and those inherent to work organization and management.

In 2003 the Department of Public Function, has conducted an important interventional study that involved eleven public offices and 3122 people from 20 organizational units.

This interventional study led the Presidency of the Council (in March 2004) to issue a Directive regarding measures to improve organizational wellbeing in the public administration. These offices were invited to boost workers’ physical and psychological wellbeing by building up the physical and relational environment to improve their life quality. The Directive is very recent, so its impact cannot be assessed yet.

In the private sector, we shall mention studies adapting questionnaires from other countries on company “climate” to the Italian situation and some ergonomic intervention in order to reduce costs and improve working conditions in some large companies. Finally ISPEL ran training courses on psycho-social risk factors, for the heads of prevention and protection services, physicians in this field, labour inspectors. ISPEL also offers consulting services on psychosocial risks to the public administration.

10.1 Background

In Italy, since the later seventies psychologists and sociologists have been perfectly conscious of psychosocial risks, but we had to arrive in the nineties to see those concepts in a law. In fact, in the ISPEL guide lines for small and medium sized enterprises to Law No. 626 of September 1994 on improvements in workers’ safety and health in the workplace, together with the risks for worker health, related to hygienic and environmental factors (chemical, physical and biological factors), we identified the so-called “transversal risks” since that may cause stress and have an impact both on safety (accidents) and health (illnesses).

1. Risks for SAFETY due to: (<i>Accidental Risks</i>)	<ul style="list-style-type: none"> • Structures • Machines • Electrical plants • Dangerous Substances • Fires – explosions
2. Risks for HEALTH due to: (<i>Hygienic - Environmental Risks</i>)	<ul style="list-style-type: none"> • Chemical Factors • Physical Factors • Biological Factors
3. Risks for SAFETY and HEALTH due to: (<i>So called “Transversal” Risks, because they influence both accidents and health</i>)	<ul style="list-style-type: none"> • Work Organization • Psychological Factors • Ergonomic Factors • Particular or Difficult Work Conditions

Figure 1 Classifying and Defining Risk

As “Transversal” risks we meant those due to:

- a. Work Organization (Wearing out work processes: continuous work, shifts, night work; planning of topics regarding health and safety: control and monitoring; plants and safety equipment maintenance; emergency procedures for coping with accidents and emergency situations; manual weights lifting; work at VDT)
- b. Psychological Factors (Intensity, monotony, solitude, lack of variety; low participation in decision making and interpersonal conflicts; tasks complexity and lack of control; extraordinary reactions at Emergency conditions, lack of motivation towards safety requirements)
- c. Ergonomic Factors (Safety systems and access to correct information; workers knowledge and capacity; behavioural rules; good communication and correct instructions in variable conditions; ergonomic means of protection both of the worker and workplace.

Unfortunately, in the description of this kind of risks, the aspects related to the *context* of work were not enough defined, in spite of the considerable scientific evidence identifying these factors as stress-producing, and thus potentially harmful.

Another problem was and still is the large number of fragmentary studies, for example about burnout. It has been studied on nurses, teachers, social assistants etc. but without a global approach.

10.2 Introduction

Before even starting to discuss the topic of this article, it is essential to specify that Italy is split along three main “fault lines”, marking major differences: north and south, public and private, and large/medium-sized and small enterprises. There is a number - still all too limited - of big organizations with high standards where workers’ health and well being are given high priority; these organizations believe in safety as a basic cultural value, and as a point in their favour compared to competitors. Generally, though, it is realistic to state that the idea of psycho-social risk has long been ignored in Italy and although it has been known for decades, it seems to be considered a topic mainly for scientists.

On 1 March 2002, Law No. 39 on measures for application resulting from the fact that Italy is part of the European Union – community law 2001 - made it compulsory for employers to assess *all* health and safety risks, and also psycho-social risks, considering the constant growth of occupational risk, changing work conditions, and scientific

research on occupational risks. Law No. 195, dated 23 June 2003, modifying Law No. 626 of September 1994, established that the skills and professional requisites of the heads of internal and external prevention and protection services had to be *adequate* to the type of work done in that workplace and the type of risks present. These supervisors must have attended training courses on prevention and protection of risks – including ergonomic and psycho-social risk, and those inherent to work organization and management - where their understanding of the subject matter had to be verified.

It thus appears that Italy is now entering the phase of evaluating psycho-social risk, so it is not possible to answer question No. 3 from Section 1.2.

Given the complexity of the question and the inevitable differences in the various settings, those working in this field are demanding tools to help them assess these risks.

In the public administration, the Department of Public Function, under the supervision of Professor Francesco Avallone, Head of the Faculty of Psychology 2 at the “La Sapienza” University in Rome, has conducted an important interventional study as part of its “Sites Program”. This “Organizational Wellbeing Workshop” involved eleven public offices: eight municipalities in various regions of Italy, the Ministry of Economy and Finance, the Ministry of the Interior, and the National Insurance Institute for Public Employees (INPDAP).

10.3 Initial approach

A working group was set up, basing its approach on previous experience in the public administration (analysis of the climate at work, anthropological studies on employees), on university expertise and consultants’ skills, to define the concept of “health” of workers in public offices, not only as individuals but with reference to the overall organizational system.

This interventional study falls under the heading in the third quadrant of Fig. 1, from Section 1.2.

Besides the “organizational climate” other aspects of organizational health were also explored. These included the physical environment and the way work was organized, and how this affected people involved. The working group drafted a questionnaire that was administered to 3122 people from 20 organizational units.

An organization was considered to be in “good health” (see figure 2) if: 1 - its workplace is healthy, comfortable and welcoming; 2 - it sets explicit, clear goals and is coherent in what it says and what it does; 3 - it recognizes and attributes value to the employees’ skills and contributions, and stimulates potential; 4 - it listens to what employees have to say; 5 - it makes available all necessary information regarding the work; 6 - it takes into account conflict situations both manifest or implicit; 7 - it takes all possible measures to prevent accidents and occupational risk; 8 - it fosters a open, communicative and collaborative climate; 9 - it ensures smooth-running operations, swift decisions, and backs action to reach goals; 10 - it keeps an eye on perceptible stress levels, 11 - it is fair in pay policies, in assigning responsibility and promoting staff; 12 – it bears in mind the specific features of each job, the content of workers’ tasks and their workload; 13 - it stimulates employees’ sense of being useful to society, and the feeling that each worker has contributed to the overall results; 14 - it is open to the outside world and to technological and cultural innovation.

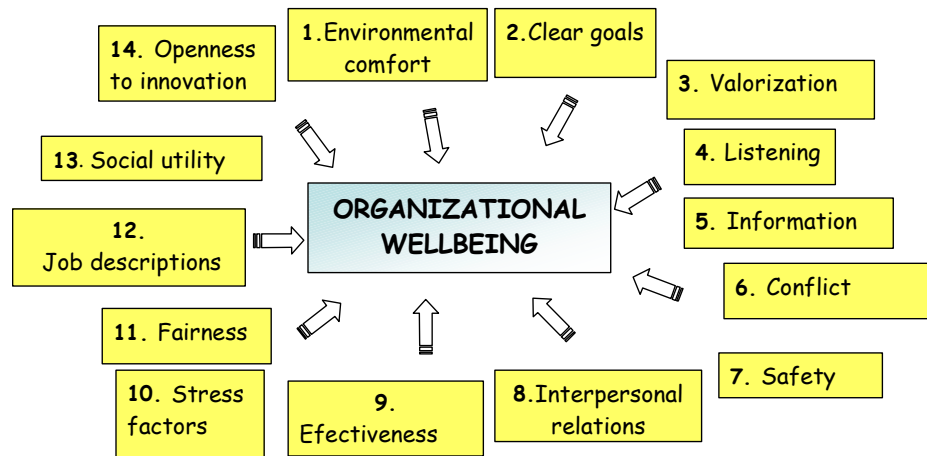


Figure 2 The Dimensions of Organizational Wellbeing

The Organizational Wellbeing Questionnaire was analyzed for reliability using Cronbach's alpha (Table 1), an indicator of internal consistency based on the mean correlation between all the items in each scale, setting a value of 1 for full coherence and 0 for no coherence between items. The table shows the alpha values, giving an idea of the reliability of the scale, meaning how accurately it measures what it was designed for, and how coherent the various items are while measuring the same thing.

Statistical Validation

SCALE	Alpha	SCALE	Alpha	SCALE	Alpha
Environmental comfort	0.8514	Conflict	0.7522	Fairness	0.7820
Clear goals	0.7975	Safety	0.8206	Job descriptions	0.6722
Valorisation	0.7131	Interpersonal relations	0.5998	Social utility	0.6999
Listening	0.6232	Effectiveness	0.7391	Openness to innovation	0.9152
Information	0.7379	Stress factors	0.6404		

Alpha values: > 0.90 excellent; > 0.80 very good; > 0.70 fair; > 0.60 poor; < 0.60 very poor.

The identified dimensions have brought to the construction of various indicators of “well being” or “malaise” at individual level verified by the Workshop to use them as the first tool for analyzing the variables influencing organizational well being. The questionnaire explore the presented areas and gathers useful data to obtain the individuated positive and negative indicators. It allows to have a “picture” of the organization covering the 14 dimensions, so it is possible to individuate the areas where more resources are needed for changing.

10.4 Wider application

The questionnaire based on these measures and indicators comprises 68 items and it is practical and not complicated. Other administrations might find it useful for checking their own organizational well being. It could be transferred and adapted to other set-

tings as well, and the Faculty of Psychology at the “La Sapienza” University in Rome will supply it free of charge to public administrations, provided that it should be administered by psychologists, and that the data obtained should be sent back to the Faculty for data base purposes.

10.5 Impact

This interventional study led the Presidency of the Council in March 2004 to issue a Directive regarding measures to improve organizational well being in the public administration, in which these offices were invited to boost workers’ physical and psychological well being by building up the physical and relational environment to improve their life quality. To perform well and efficiently workers need to work in a context that allows easy exchange, transparency and visibility of the results, with thoughtfully designed space around them to permit smooth interpersonal relationships and professional development.

Plans to improve organizational well being may involve one or more of the following: structure and organizational roles; technological innovation; organizational processes and culture; policies for managing and developing human resources; internal and external communications; changes to rules and procedures.

The Directive is very recent, so **its impact cannot yet be assessed**.

10.6 Mobbing/bullying

The question of mobbing/bullying calls for separate discussion. Up until 1999 it was virtually unknown in Italy, but it is now one of the best known psycho-social risks. It even creates a sort of halo effect not just among those involved in this sector, but among the workers themselves, as if it were the only possible psycho-social risk.

Obviously, from the work of the numerous hot lines set up in 2000 for the victims of mobbing, it is clear that often those calling these centres are not actually subject to the kind of systematic, intentional harassment that can really be considered mobbing, except in cases of “strategic” mobbing; they are more likely to be afflicted by bad work organization, and poor management of human resources, which bothers them all the same. In Italy at least we have to be careful to distinguish these situations.

The Region of Tuscany (centre-north of Italy) is drafting guidelines for how departments of protection and prevention should best approach the question of “moral violence at work”. They put the problem into a clearer picture where there are interactions between the work environment, quality, safety and ethics, showing that much of the trouble clearly results from organizational inadequacies.

On April 2004 a Decree of Ministry of Labour and Social policies included psychological and psychosomatic diseases (DA: Disturbo dell’Adattamento (Adjustment Disorder) and DPTS: Disturbo Post Traumatico da Stress (Post Traumatic Stress Disorder) caused by organizational disfuncions in the list of diseases to be denounced to the Labour Ministry itself.

10.7 Other Activities

In the private sector, we shall mention here one study, done by an occupational psychologist, Dr. Fabio Biancalani, always in Tuscany. He adapted questionnaires on company “climate” to the Italian situation, remaining as close as possible to the origi-

nal texts (1-QCE, 2-WES, 3-IMPC). The sample comprised 452 workers in companies around Florence, with more than 10 years experience and more than 100 employees. These tools can be applied in any organizational setting, for most types of work and jobs, though in some cases they may have to be adapted to the specific situation. Questionnaires should only be administered by registered practicing psychologists, during normal working hours, and interviewees should be kept absolutely anonymous in order to ensure their answers are as truthful as possible. Always in the private sector, some companies performed ergonomic interventions in order to reduce the costs and improve the working conditions.

As for activities falling under first quadrant of Fig. 1 (section 1.2) in 2003 and 2004 ISPESL ran training courses on psycho-social risk factors, for the heads of prevention and protection services, physicians in this field, labour inspectors. ISPESL also offers consulting services on psychosocial risks to the public administration, as is the case for the Ministry of Transport already booked for 2005-2006.

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11 Prevent (Belgium)

Psychosocial factors and work organisation: Overview of Belgian approaches developed from an organisational perspective

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Abstract

In this paper an overview will be given of different approaches, applied in Belgium, to prevent work related stress.

First the Belgian Legislation framework is explained and it will be clear that from the legislation point of view, focus on work organisation is included in the legal framework. Looking at the reality of work from a system approach is the basic assumption. In a system approach technique, work organisation, social relations at work, working conditions and environmental factors are taken into account as well as their interaction and their mutual effects.

In the second chapter approaches, used in Belgium, are described in an exemplary way. Each approach is situated in the quadrants of the figure developed as a guideline for this paper. First methods based on expert analysis are discussed and advantages and disadvantages are described. Secondly most frequently used questionnaires are described. The most important research projects are discussed.

This paper has not the ambition to be complete; some frequently used methods and instruments are discussed. But the examples chosen demonstrate that Belgium has many instruments, methods and approaches to work on the issue of psychosocial and organisational problems at work.

11.1 Introduction

First, the Belgian legislation on psychosocial issues is briefly explained, secondly an overview of different approaches will be given. As the Belgian legal system on well-being at work is strongly focused on the organisational perspective all discussed approaches have an organisational perspective.

11.2 Legal Basis

The Well-being Act of 4.08.1996 on the well-being of workers during the execution of their work, transposes the European Framework Directive 89/391/EEC of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health of workers at work. The Act is applicable to all employers of the private as well as the public sector. The Well-being code and specific regulations that implement this Act are further described in several Royal Decrees and replace the former decrees of the Health and Safety Act (1952). The regulations oblige the employer to implement a dynamic risk management system, based on a risk assessment, where a series of mandatory prevention principles need to be applied. Besides the traditional field of technical safety and health, also new fields focusing on the quality of working conditions are mentioned: ergonomics, psychosocial factors and violence, mobbing, and sexual harassment. Every company has to appoint a prevention officer assisting the management in the implementation of the prevention policy. The company can work together with a prevention service (external) to realize the prevention policy.

The act also describes the setting up of a prevention committee.

The Royal Decree of March 1998 singles out psychosocial workload as an area of risk to be analysed. It is also a regulation task and area of expertise for internal and external prevention services. The decree set their remit as: “to contribute to and assist in the study of workload, adapting the techniques and conditions of work to the physiology of the individual, preventing physical and mental work-related fatigue, and taking part in the analysis of the causes of workload-related disorders and other work-related psychosocial factors.

Every company or organisation should have his or her own prevention policy on work related stress. The well being act has been re-enforced by a collective industrial agreement on work related stress (CAO nr. 72, 1999). The prevention policy, meant in the well being act, was made more concrete. In the agreement a definition of the concept “stress” is given:

Stress is a negative condition that is perceived/experienced by a group of employees and that is caused by the fact that they don't feel capable to realise the demands that are put on them. This negative condition can lead to complaints and problems (dysfunctioning) on psychological, social or physical level. The agreement cites four areas of stress risks: job content, the physical circumstances of the job, work relations and working conditions.

A final legislative and regulative milestone was passed in February 2002 (D'Hertefeldt, 2002), when the parliament passed a supplemental act to make protection of workers against violence, psychological and sexual harassment in the workplace, part of the prevention policy.

Recent research shows however that only 19% of Belgian employers did undertake concrete actions within the collective industrial agreement's framework. (Peirens, K., 2004, p. 10). This finding illustrates that implementing the collective industrial agreement is not easy.

The social partners came to the same conclusion in 2002 and decided an evaluation on the impact of the collective industrial agreement was needed. The National Labour Council held an evaluation round and finished the report in April 2004. The National Labour Council concluded that the implementation of the collective industrial agreement on stress confronted employers with a lot of difficulties and proposed to publish some guidelines (in progress).²⁸

The collective industrial agreement obligates employers to conduct a policy to prevent stress on a collective / organisational level (not on an individual one). To do so a risk analysis is needed focused on tasks, working conditions, labour relations and work organisation. Looking at the reality of work from a system approach is the basic assumption. In a system approach technique, work organisation, social relations at work, working conditions and environmental factors are taken into account as well as their interaction and their mutual effects.

Asking employers to take action on an organisational level is asking them to take a closer look on how they organise work for their employees, in what conditions employees are working and what kind of jobs they have to do. An organisation needs to be ready for this and needs to be open for criticism. One should realise that an analysis of this kind offers possibilities for improvement. This is not an easy decision. That is

²⁸ Those guidelines describe different approaches. Some examples discussed in this paper are also being described in the guidelines the National Labour Council is preparing.

why in practice programmes on preventing stress, on an individual level are being organised (time management, coping with stress, physical training...). Those programmes are not to be seen in the scope of an organisational or system approach. And their effectiveness seems to be poor (De Wit, R., De Witte, H., 2002, p. 305.)

11.3 An overview of Belgian approaches

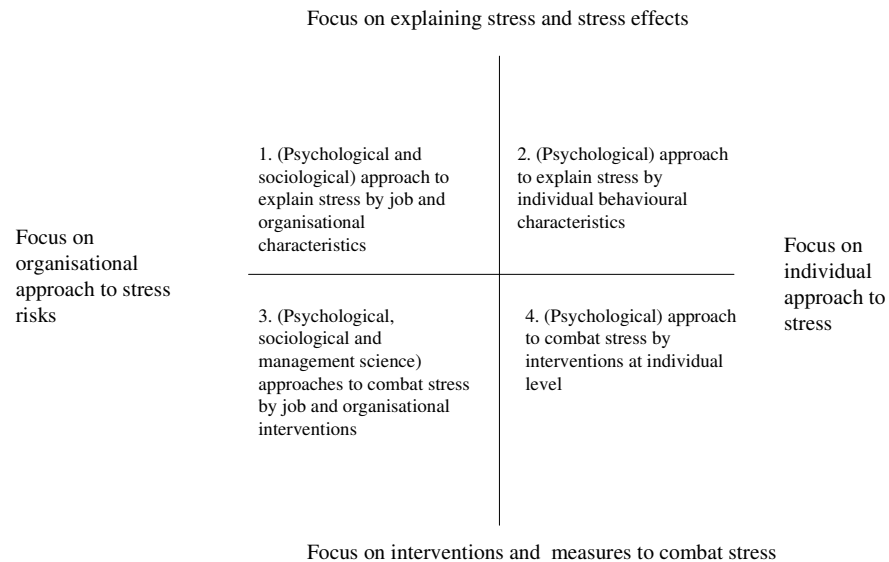


Figure 1

Keeping the Belgian legislation in mind, most approaches can be situated in the first and third quadrant. Focus on organisational characteristics to understand and to prevent (combat) stress. A brief description of some approaches will be given. The examples were chosen taking into account the criteria formulated in the instructions for this paper, are being met (Beermann e.a., 2004, p. 3)²⁹.

Roughly two groups of approaches can be distinguished. Some approaches focus on the working conditions and the processes and other approaches are based on self-reported information.³⁰

11.3.1 Analysis of working conditions and processes by experts. (quadrants 1 & 3)

The mental demands, tasks and work organisation are assessed in a systematic and analytical way. This analysis could be integrated in a classical way of risk analysis on safety or health topics of jobs and work places (using checklist, observation methods...). This approach is depending on the expertise of the prevention officers carrying out the analysis.

²⁹ 'Instructions for papers and programme' (Beate Beermann, Evelyne Morvan, Peter Oeij, September 2004).

³⁰ A distinction between those two approaches is often called : objective (expert who's evaluation external factors) or subjective (employees themselves are evaluating). This is not a relevant discussion. Both approaches can be objective or subjective. The use of the word subjective is often related with less quality and less reliability, but this is not necessarily the case. It is important, in each approach, to apply methods, instruments and tools in a correct way.

Checklists used in this approach are: e.g. WEBA, TOMO, Lest methode (Prevent Actua, 2000, Op De Beeck & De Bodt, 1999). Op de Beeck (1999) and De Wit & De Witte (2002) describe the advantages and de disadvantages of the use of checklists:

Advantages:

- Use of the checklist by an expert, not closely related to the job and the organisation, not blind for the reality within the organisation A checklist is useful during the development of jobs, tasks, workplaces (concept)
- Checklists with a broad perspective (focus on more then only stress) could be used to come to a global an integrated prevention policy and enforce multidisciplinary within the prevention services.

Disadvantages:

- An expert is not involved in the job and the organisation, limited knowledge of the job and the organisation itself
- A checklist is limited to the points described on the list: some critical problems might be not detected.
- Some stressors are difficult to observe (concentration, complexity...)
- The effect of the observation itself could influence the behaviour of the persons observed
- Some checklist do have a poor inter-observer reliability In this approach the analysis is focused on the job itself or the organisation it self, not on the individuals and their personal perception.

Some external prevention services developed their own checklists to analyse work related risks.

Weba

Weba is one of the methods frequently used in Belgium by researches (sociology and psychology). Within the Weba methodology analysing and evaluating “functions” (job) is the central point. A job should be complete and balanced. Complete means that employees have preparing, and supporting tasks as well as practical, executing³¹ tasks. Balanced means that the employee has the possibility to solve problems related to the job, he or she has the necessary means and ability to do so.

The Weba methodology describes jobs, evaluates them and offers possibilities to re-design them.

The advantages of Weba are that the method focuses on the risks, not on the behaviour, Weba does not use the perception of the individual worker, risks are analysed and evaluated from an organisational point of view and offers possibilities to modify jobs in a structural way. Disadvantages are similar to the those above mentioned. (Cambré, B., 2004).

11.3.2 *Methods based on self reporting (quadrants 1 & 3)*

In these methods the ‘eyes’ of the individual or the employee are used to get an idea about the risks related to psychosocial and organisational factors that might cause work related stress. The expert about ones job is the employee himself. Employees are asked (by using questionnaires, interviews, group discussion) to give their evaluation on certain job characteristics. The individual is use to get information about the organisation.

Using questionnaires is relatively cheap, quick and easy, but results depend on the response rate, the composition of the group of participants. A lot of methodological and statistical remarks can be made on the use of questionnaires, but this discussion is not within the scope of this paper.

³¹ Operational tasks, performing tasks.

Questionnaires

Several questionnaires are being used in Belgium: Dutch and American questionnaires alongside certain Belgian models. The questionnaires most frequently used are based on clear theoretical models and have been validated. Most questionnaires are build on or related with the Karasek Model (Job demand control model).

VBBA³²

The VBBA (Van Veldhoven, 1996) is a broad instrument that describes the characteristics of the job (amount of work, speed, emotional strain, physical strain, variety, autonomy, learning opportunities) and the work organisation and social relations and the working conditions (salary, career development, (in)certainty for the future. Some possible effects of the job are being measured as well: satisfaction, involvement, need for recovery, turnover, sleep deprivation, emotional reactions during the job, and fatigue during the job. In Belgium Quest Europe is disseminating the VBBA. The database is in the hands of “NOVA/INRCT”³³, a department of the Federal Public Service of Employment and Social Dialogue. A Dutch and a French version are being used in Belgium.

WOCQQ

The Wocccq : Working Conditions and Control questionnaire is a Belgian Psychosocial risk diagnostic aid developed at Liège University’s Psychology of Work and Business Department. It exist in Dutch and French. It can be used both to measure existing stress levels, and as groundwork for a prevention policy by identifying stressors in working conditions. It is a questionnaire-based method most suited to medium sized and large firms. Stress in the workplace is seen as a worker’s response to the demands of a job for which he feels he may not have the necessary resources and which he considers he has to cope with (De Keyser and Hansez, 1996). The data collected in the various areas studied are entered in a database, the WOCQCDatabase ©. The maintenance of this WOCQCDatabase © is used for the creation of standards and thresholds for comparison for businesses; and for the improvement of the hypotheses of research into specific problems regarding working conditions such as analysis of the conditions of employment of experienced workers.

Job Content Questionnaire

The questionnaire measures two important job characteristics: the psychological demands and the control / autonomy (the possibilities to develop skills and the opportunity to learn, to be creative and decision latitude. This questionnaire is very practical and offers a lot of possibilities to develop actions and preventive measures. (De Wit & De Witte, 2002, Pelfrene et al, 2003).

Questionnaires : discussion

Risk assessment on psychosocial factors does not only focus on ‘stress’. Sometimes data on strain is added. The negative effects of stress are being measured. To describe “strain” external data such as figures on absenteeism, accidents, turnover, overtime, ... can be used. Certain biomedical data could be used as well. But to measure strain self-reporting questionnaires are used as well in Belgium: General Health questionnaire, VOEG, MBI. The use of these questionnaires in combination with the above-described

³² From the Dutch acronym Vragenlijst Beleving en Beoordeling van de Arbeid (questionnaire on the experience and assessment of work).

³³ Nationaal onderzoeksinstituut voor arbeidsomstandigheden

questionnaires involves a triviality trap. Asking if one's job is tiring (stressor) or if someone is troubled by fatigue (strain) are two measures that look almost identical, of the same concept. A strong correlation between the two measures could be provoked only by linguistic characteristics (De Wit & De Witte, 2002). Another trap that has been studied recently, also in Belgium, is the fact that negative affectiveness might influence the responses of the individual on the questionnaires. Research findings are not completely clear yet but it is important to be aware of the possible effect of this negative affectiveness. (De Witte, 2002, De Wit & De Witte 2002).

The advantage of questionnaires is that a diagnosis of the problem is made. Different elements, part of psychosocial and organisational problems at work, are taken into account. By using a standardised questionnaire an organisation can compare itself with other organisations or companies in the same branch (references, benchmarking, databases). This however, should always be used in a correct and professional way. Having a better picture than another company in the same branch doesn't necessarily mean that there is no problem at all. Risk diagnosed within one company should still be prevented. Not all approaches in which questionnaires are used allow a company to develop strategies and measures to prevent risks related to psychosocial and organisational aspects of work. Once the picture is made, many questions remain unresolved: What can be done? Which concrete actions can be planned? where should we start? Another problem related to the use of questionnaires is that expectations are being created. Employees who fill out a questionnaire expect that something is done with the results afterwards. To resolve these problems a step by step strategy to realise the risk assessment and the prevention policy is very important.

Participatory methods

Participatory methods of risk analysis are often used to evaluate and improve the quality of work and working conditions. This method is also suited to determining and assessing psychosocial workload hazards. Workers determine and assess their activities and some risk factors themselves and give some ideas for improvement. The underlying idea is that the worker himself is the specialist of his or her activities, job. Different participatory methods are being used in Belgium.

Participatory risk assessment can also be carried out during a group process. A group of people tries to identify and describe some problems (risks), clarifies them and looks for solution. This process takes place under the guidance of an expert who summarizes the data between the different meetings. DIP and DEPARIS are two methods that can be cited in this perspective.

A possible negative group dynamic is an important disadvantage of this approach and this approach is time consuming.

To offer a response on the disadvantages of both questionnaires and participatory risk assessment on a group level Prevent developed a participatory approach that seeks to find a solution to these problems.

The "PRA psychosociale belasting" is combining a questionnaire with a qualitative and participatory analysis of the psychosocial issues at work. A 31-item questionnaire is used to describe and understand the psychosocial risks within an organisation (Op De Beeck, Peirens, 2003). The items are scored on a scale and explained (qualitative data) and is often used during training programme on psychosocial issues at work. Every employee has his or her questionnaire. Group discussion comes in a second stage in which working groups discuss to find the most suitable solution. The qualitative data allows a good understanding of the scores and explains why certain problems occur. The participant is not only invited to explain the item but also to suggest a solution or an improvement. This approach offers concrete suggestions for concrete action and makes it possible to understand the underlying reasons for certain problems.

To measure “strain” an index is calculated. This index describes the individuals perceived charge of work. Items such as fatigue, concentration, work rhythm, responsibility and interest are being used.

The most important issue, that is also recognized by the National Labour Council is that psychosocial issues at work are not isolated and not considered as being manageable just in the use of a questionnaire or an assessment. Work should always be referred to as a system, different risks are generated at work and an integrated prevention policy is needed. Organisations and companies should be aware of the fact that managing psychosocial risks is a question of working step by step. Assessment is one step. Thinking before acting is very important as well. A commitment to go further than the picture and the willingness to discuss psychosocial issues, relate them to other issues and put them in a broad perspective which are key for a good prevention policy.

A third participative approach is called “appreciative inquiry”. In this approach the emphasis is not on what goes wrong in a organisation, but on what is going good. In that way good solutions, that already exist, can be reinforced. The process takes place in 4 phases: appreciating (look for what is going good now), envisioning (imagining how the organisation could be), dialoguing (organising a broad dialogue on how the organisation could be) and innovation (implement the desired changes).

11.3.3 *Focus on the individual (quadrant 4)*

It is important to note that individual programmes (Employee Assistance Programs, relaxation programs, training of coping skills ...) are being introduced in companies. The success of these programmes has not been analysed yet in a sufficient way but up till now their effectiveness seems to be poor (De Wit & De Witte, 2002). If those programmes are integrated in a company policy and if the “prevention hierarchy” is respected (work organisation, training, HR,...) those programmes may have an important and successful added value. If they are introduced in an isolated way and if the ‘problem source’ is not solved, those programmes will only have the effect of a symptomatic treatment.

11.4 **Research**

To understand psychosocial factors and work organisation research is important. In Belgium two recent research programmes are focused on stress. Research is an important basis to develop new approaches and new interventions to combat the problem of work related stress and the problems involved (on an individual, organisational or society level). Explaining and understanding stress is the aim of those studies (quadrant 1, partly quadrant 2 but not on behaviour, rather on characteristics, perception).

Bellstress

Bellstress is the name of a research network of university professors, since the nineties. Many research projects took place to examine the relation between health problems and stressors at work. The Karasek model is being used as conceptual framework for stress at work. The relation with absenteeism, health indicators such as cardio vascular problems, immunity, and others has been studied. The federal government funds this research.

SERV³⁴ “*Flemisch Workability Monitor*”³⁵

A representative and accurate look at the quality of work on the Flemish labour market (Bourdeaud’hui et al, 2004).

This Survey provides an opportunity to monitor working conditions in Flanders and to analyse specific themes in depth, such as: sector differences, working conditions and gender, age, employment contracts, etc.

This survey describes:

- 6 Risk indicators (work pressure, emotional pressure, task variance, autonomy, support from immediate supervisors and difficult working conditions)
- 4 Workability indicators (mental fatigue, well-being at work, learning possibilities and work-life balance)
- information on the consequences of workability problems (effects on health, absenteeism, turnover, feasibility or performing the job until retirement age).

The objective of this project is to look for relations between the risk indicators, the perceived workability and the consequences. The conclusions can be used to improve the situation and to assist policymakers (political).

In 2004 the first survey took place, follow up research is planned for 2007 and 2010.

11.5 Conclusion

Due to the legal framework most approaches in Belgium are on an organisational level. Risk assessment, action research, action planning is mainly focused on change on the organisational level. Different instruments and methods are used, all with their own characteristics and pro and contra’s. More important however is that the organisations and companies realise and get convinced of the fact that psychosocial and organisational issues are not to be isolated from other health and safety topics. Quality of working life has to be seen in a broad perspective and with a global and integrated view. This implies a multidisciplinary approach.

This paper described some approaches, used in Belgium in an exemplary way. But the examples chosen demonstrate that Belgium has many instruments, methods and approaches to work on the issue of psychosocial and organisational problems at work.

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12 FIOH (Finland)

Psychosocial organizational interventions in Finland

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Abstract

Psychosocial organizational interventions were started in the mid-1980s in Finland. The processes applied in organizational interventions have been survey-feedback evaluation, the conference method with democratic dialogue, the maintenance of work ability, the promotion of a healthy and productive organization, and modelling work processes and developing conceptual mastery. The interventions have aimed at improving the psychosocial work environment, the well-being of employees, and their conceptual mastery of work. The evaluation of these interventions has been based on before-after questionnaire surveys and the use of qualitative process data. There is an urgent need to develop methods for evaluating interventions in the future.

12.1 Introduction

Finland has a long tradition of participatory organizational interventions at workplace level. Psychosocial job stress research was started in the 1970s according to the US and Swedish models. The earliest organizational stress interventions were carried out in the early 1980s (Leppänen 1984). The industrial democracy movement in Sweden and Norway in the 1970s did not reach Finland at that time. However, the democratic dialogue method applied in work life development projects was adopted later in the 1990s (Gustavsen & Engelstad 1986). The first review of Finnish organizational development and job redesign interventions was published in 1995 (Lindström 1995). The survey feedback method was applied often in stress-related organizational interventions, followed by measures reducing occupational stress, and finally the evaluation of the results. Also union-researcher cooperation projects to redesign the jobs were carried out in some industrial branches. Many of these interventions were institutionally supported by occupational health service personnel. Also cognitive approaches, such as developmental work research and increasing the conceptual mastery of work, were applied. The number of organizational interventions based on process consultation and management of organizational changes started to increase from the beginning of the 1990s.

In the past few years, organizational intervention practices in Finland have been based both on psychosocial stress models and the German activity theory. Broadly speaking, most of these interventions were focused on psychosocial stress factors, or aimed to improve organizational functioning. The intervention processes applied were process consultation, applying participatory principles. Earlier, the results of organizational interventions have been evaluated mainly by using before and after measurement of job stressors and well-being, or natural comparisons within the organization. Control groups are seldom used because too many “outside” natural changes occur when interventions are long. Recent organizational intervention approaches are based on similar before-after designs, but also more carefully planned research designs have been used. This is because most organizational interventions are part of the practical development, not research.

12.2 Recent Finnish approaches in organizational interventions

From the 1990s onwards, several kinds of organizational interventions to combat psychosocial factors at work have been carried out. These have been multifaceted company-wide research and organizational intervention projects (Kalimo & Toppinen 1999). Many of them are more focused job stress interventions (Kivimäki & Lindström, in press), e.g. among small and medium-sized companies or in the public sector, especially in health care organizations like hospitals (Lindström & Kivimäki 1999). The classification of the organizational interventions applied in this report is the following:

- survey-feedback-based organizational interventions (Lindström & Kivimäki 1999)
- promoting a healthy and productive work organization (Lindström et al. 2000)
- creating and implementing innovative organizational practices (Länsisalmi 2004)
- multilevel and multimethod organizational interventions (Lindström 2004)
- workplace health promotion programmes (Elo 2004), including the Finnish maintenance of work ability (MWA) model
- to develop work processes and to improve the conceptual mastery of work (Lepänen 2001).

The targets in the various approaches have varied from one work unit or working group to the whole personnel of one company, or a group of SMEs. Sometimes the main focus in the intervention has been on a certain organizational level or a certain occupational group, such as supervisors, office workers, or nurses.

A wide variety of psychosocial stressors have been tackled in the organizational interventions. It is seldom possible to target at specific factors, when carrying out organization level interventions. Therefore the interventions often focus more generally on a broad range of job stressors or general well-being.

The intervention process (both structural and social) itself is an important part of the whole intervention. The most common processes applied in many interventions have been survey feedback, the conference method based on democratic dialogue, analysis of work processes, and the model of Finnish maintenance of work ability (MWA). These have been used in many practically oriented interventions as well as in research oriented ones. In a practical intervention, occupational health experts or organizational consultants often act as process facilitators.

Because organizational interventions should be contextualized to the organization in question and its actual change needs, they can also be classified based on the main objective, e.g. the improvement of employee well-being, improvement of specific psychosocial factors at work, or the functioning or management of the organization.

12.3 Description of the Finnish approaches in organizational interventions

The most relevant types of organizational interventions were selected, and one published example of each is described. The Finnish organizational interventions chosen for the descriptions are classified into six groups (Table 1).

Table 1 Types of organizational interventions carried out in Finland, examples

Type of approach used	Interventions and measures taken	Results of interventions	Effectiveness, feasibility of replication
1. Organizational intervention-based survey feedback on health care (n=900) (Lindström & Kivimäki 1999)	<ul style="list-style-type: none"> - Participatory planning of organizational measures at organizational and unit level - Pre- and post-measures with questionnaire and qualitative process data 	<ul style="list-style-type: none"> - Positive effects on social interaction and ergonomics - Improved job satisfaction and well-being 	<ul style="list-style-type: none"> Reaches a large group of employees - Possible to replicate the model - Organizational culture and temporal context should be considered
2. Promotion of healthy and productive work organization - 217 SMEs - 4068 employees (Lindström et al. 2000)	<ul style="list-style-type: none"> - Survey feedback at organizational and individual level - Participatory planning supported by OHS personnel - Planned customized organization interventions in customer service, multiskilling, leadership and collaboration 	<ul style="list-style-type: none"> Improvement in <ul style="list-style-type: none"> - valuing people - social climate and collaboration - Better informing about changes - Improvement in well-being through changes in organizational practices - Increased productivity and profitability 	<ul style="list-style-type: none"> Simultaneous employer and employee perspective - Based on support from OHS personnel and external consultants - Simultaneous changes in the national economic situation.
3. Establishing an innovative organizational climate and practices - 20 SMEs (Koskensalmi et al. 2000)	<ul style="list-style-type: none"> - Conference method with search seminars and exchange of experiences seminars - network seminar with clients 	<ul style="list-style-type: none"> Increase in job satisfaction and new good practices 	<ul style="list-style-type: none"> Collaboration between companies requires trust
4. Multilevel intervention approach in nursing home organizations - 5 nursing homes for elderly people - 600 employees (Lindström et al. 2004)	<ul style="list-style-type: none"> Participatory planning at work unit level - Learning organization principle and team building - Patient needs and job redesign - Institute level and whole organization level <ul style="list-style-type: none"> - Supervisory practices - Conference method - Maintenance of work ability 	<ul style="list-style-type: none"> Frequency of participation related to improved job content and collaboration and adopting of common values and vision for the future 	<ul style="list-style-type: none"> Frequency of individual participation was a good criterion - Easy to replicate the model - Dependent on actual state of the organization and public opinion about care for the elderly

Type of approach used	Interventions and measures taken	Results of interventions	Effectiveness, feasibility of replication
5. Workplace health promotion program municipal organization - n = 1800 (Elo et al. 2004)	Questionnaire survey for all before and after - Qualitative process data and evaluation - Combination of participatory planning and implementation of intervention - Specific development for supervisors using psychodynamic groups	- Improvements in the psychosocial work environment - Decrease in sickness absenteeism and in emotional exhaustion	- Model for organizational health promotion developed for the whole organization
6. Modelling work processes and developing conceptual mastery of work n = 20 (Leppänen 2001)	- Analysing the work processes - Developing the conceptual mastery of work	- Increase in process flow - Economic benefits - Reduced stress of the personnel	- Model based on the activity theory

The chosen classification of organizational interventions carried out in Finland is influenced by the national theoretical tradition and the research, as well as the consultative infrastructure and its orientation. The sociocultural and local context of the interventions and their main actors naturally have effects on the feasibility of these interventions and the possibility to replicate them.

The most common organizational level interventions in which occupational health experts are involved, are based on the survey feedback method (Harrison 1994). The psychosocial factors at work are usually surveyed by a structured questionnaire measuring the psychological and organizational factors. The feedback on the results is then given by the OHS personnel or by an outside consultant to the employees (Elo et al. 1998, Elo & Leppänen 1999). The intervention process is customized by planning the intervention, implementing and finally evaluating it.

Usually only the organizational interventions which are planned research projects have been carried out systematically and have a proper process description, study design and measurement of psychological and social factors at work as well as well-being outcomes. For example, in a primary health care organization with 900 employees the whole developmental cycle was applied (see e.g. Harrison 1994). The main emphasis was on leadership practices, managing work overload, and ergonomic problems. Specific interventions were launched at work unit level, the process was supported by the OHS personnel and outside consultants. The benefits were evaluated by comparing the pre- and post-interaction questionnaire surveys and the perceptions of the participants during the two-year project. Improvements were found in collaboration within and between work units. The professional competence had improved as well. About 40% reported that the intervention had been useful for productivity, employee well-being and the quality of services. The main lesson learned from the project was that the role of the project leading group and the process consultation support should have been more intensive. Also the organization was too big, so that all the topics at the various organizational levels and between them could not be managed.

12.4 Promotion of a healthy and productive work organization

The healthy work organization or organizational healthiness is based on the theories of Parsons on maintaining balance in an organization. In 1990 and 2000 it has been complemented with job stress and organization theories (Murphy and Cooper 2000).

A large-scale development program was carried out at the end of the 1990s at over 300 small and medium-sized companies (SME) (Lindström et al. 2000). The psychosocial factors at work were measured with a questionnaire at the beginning and end of the three-year process. Subsequently, targeted organization interventions were carried out. Prospective data on psychosocial factors, well-being and company productivity and profitability were collected. The process was supported by an outside consultant and the OHS personnel. Especially the effects of specific interventions carried out were looked for. These were the development of customer service, multiskilling of the workers, improving leadership practices, and improving collaboration within the company.

The slight positive change in job satisfaction and the decrease in exhaustion symptoms related to positive changes in valuing people, supervisory support, social climate and better informing about changes at the workplace. The changes in work ability were analyzed, and they were positively related to changes in job characteristics and physical work load. The afore-mentioned interventions and job satisfaction were also related positively to productivity and profitability at company level.

The interventions at various companies were tailored according to their needs. The main problem, from the evaluation point of view, was that the processes were not described at company level. They might have revealed some specific positive and negative aspects facilitating or hindering the process. One finding was also that successful companies invested more in developing their personnel, which in turn affected their profitability.

12.5 Implementing innovative organizational practices

This kind of organizational intervention was based on findings from the hospital wards, where units with innovative practices had higher job satisfaction and quality of care. Another similar study showed a correlation with innovative organizational practices among SMEs (Länsisalmi 2004). In 20 small and medium-sized companies, organizational interventions promoting innovative practices were carried out. The process applied was based on using the conference method as a process model. The project started with a search seminar in which all the employees and management participated. Based on its results, good practices developed by the SMEs were published, as well as case studies (Lindström 2002). The biggest changes found were the improved communication between various employee groups and the management, as well as within the work units. The quantitative evaluation was done quite roughly because the main emphasis was on qualitative analysis. Also the quantitative measures used showed an increase in aspects necessary for innovativeness. The main obstacles were related to the organization culture. That is why the conference method is suitable for this kind of approach (Länsisalmi 2004).

12.6 A multilevel participatory organizational intervention approach

A multilevel approach was carried out in an elderly care organization (Lindström et al. 2004). The target organization, the institution for the care of elderly people, consisted of five nursing homes with a total of 950 patients/residents, and 34 work units. The employees totalled 600, most of whom were nurses and auxiliary personnel. The levels of the interventions were the whole organization level covering the entire personnel, and the ward level. The intervention itself was based on the model of the Finnish Maintenance of Work Ability (MWA) combined with participatory organizational interventions and local tailored projects at ward level. In the training and development events, and throughout the whole process, the conference method with democratic dialogue was applied. During the two-year period, annual joint follow-up and evaluation seminars were organized for a smaller number of participants in order to get feedback about the success of the process and about the ideas for the next year's program.

The perceived changes in psychosocial factors in the work and well-being of the employees during the intervention program were measured by a questionnaire after the intervention. The personnel answered open questions and structured questions, evaluating the benefits or drawbacks they perceived in the organizational intervention program. The participation of the individuals was registered in each training or development event.

The high rate of participation in the whole organization and at nursing home level correlated positively with better perceived job discretion or better opportunities for personal development and growth. The higher participation rate in the whole organization and the nursing home correlated significantly with greater satisfaction with work organization and collaboration. The high individual overall participation rate in the interventions was also positively related to perceived improvements in psychosocial factors at work, such as job content and collaboration, and future challenges of one's own work unit.

The evaluation of the whole intervention program was done from four perspectives: the actual situation in the nursing home (contextual), effectiveness, learning, and future prospects. The overall intervention process was evaluated as having been successful. The use of a participatory organizational intervention with high individual participation and supervisor commitment gave positive results at both nursing home level and individual level. The temporary and local context of the nursing homes had, however, a major effect on the success of the program. The role of an outside consultant as a process facilitator was crucial for carrying out the program.

The main benefits were derived when developmental activities were carried out in the whole organization and at nursing home level. They contributed positively especially to job content and collaboration, and facilitated the adoption of common values and visions.

12.7 Modelling work processes and developing conceptual mastery of work

Modelling work processes is a widely used approach in the process industry in Finland, but also in other work processes, aiming to develop the organization internally. The focus is on the processes as well as on the personnel skills. This kind of approach has been used in Finland widely in the paper industry, where both the concep-

tual mastery of work and the development of the work process has been the goal (Leppänen 2001). This approach improves the job and process design and employees' mastery of it and decreases the job strain.

12.8 Discussion

Most of the presented interventions belonged to area three in the described general model by Morvan, Oeij and Beerman (Chapter 1). They combated stress by job and organizational interventions. In most of these interventions the targeted focus was on job and organizational stressors, not so much in their possible effects on well-being or health. The target level was either a team, work unit or whole organization, but not an individual person. The difficulties in this kind of focus are that both temporal and local factors may modify differently various subgroups. Qualitative data should be collected during the process in order to be able to use it when interpreting the results. More individual-oriented interventions have shown that support from one's own work units is important for an employee during an intervention. In these organizational interventions the structural changes in the workplaces and changes in their business and customer relations were registered in order to account for their possible effects.

The applied theoretical models and validity of the measurement methods should be better taken into account when interpreting the results. The main observation regarding the presented organizational interventions was that the economic situation in the branch and the whole county was influencing the results. The most negative actions were possible downsizing or restructuring during or immediately after the intervention process.

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13 TNO Work and Employment (Netherlands)

Organisational interventions to combat stress risks in the Netherlands: design oriented approach

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Abstract³⁶

One of several organisational interventions is described, namely Combat Workstress Approach (CWA), and its background in modern sociotechnology (MST) as a design oriented approach. CWA's central goal is to assess and eliminate the sources of disturbances in the work environment. Interventions aim at first redesigning the primary process and then jobs. The method combines stress risk reduction with productivity improvement and is transferable to other countries. MST's central aim is to enhance an organisation's flexibility to respond to changing environmental demands by designing less complex organisations and high professional autonomy in jobs. Other approaches and the policy context are sketched.

13.1 Introduction

13.1.1 Purpose of this paper

The members of PEROSH, Partnership for European Research in Occupational Safety and Health, are concerned with the issue of 'work organisation and psychosocial factors of stress'. The group observed a need to enhance knowledge on the theme 'Organisational interventions to combat psychosocial factors of stress'. A first step in doing so was to create opportunities to learn from each (participating) country about activities undertaken in this field. The group has a special interest in the organisational interventions and measures and their effects in reducing work related stress (risks). The PEROSH group decided to organize a workshop at the 6th Annual Conference of the European Academy of Occupational Health Psychology to exchange experiences from different countries. Each participating country was invited to deliver a statement-paper about the state of the art in their country. This paper is the Dutch contribution.

13.1.2 Framework for approaches to study psychosocial risk factors

There are at least two aspects which hinder a comparison among European countries. Despite a focus on psychosocial factors which are work related and work organisation related, not all countries participating in PEROSH already have developed approaches from an organisational perspective. There are, however, many approaches used which are individually oriented. Another comparison hindrance to put forward is that approaches used may differ in the degree to which they are oriented on research or on intervention. In order to position the variety of approaches, a common framework was developed. Figure 1 presents four possible approaches of projects on stress along two dimensions. By 'stress' we mean to include all work related psychosocial effects. The two dimensions indicate:

1. a focus on stress approaches either at the level of individuals (i.e. individual / personal characteristics) or at the level of organisations (i.e. characteristics of jobs and organisations);

³⁶ Paper can be retrieved from: <http://tno-arbeid.adlibsoft.com/adlib/docs/PEROSH.pdf>.

2. a focus on either explaining stress and effects of stress (scientific and policy research) or on interventions and measures to preventively or curatively combat stress and stress risks (consultancy, action research).

We do realise that this classification has restrictions. At the level of individuals, for example, individually oriented approaches not only address personal characteristics, but also individual complaints, absenteeism behaviour and work reintegration. Another point to mention is that the division between individual and organisational interventions is less strict in practice. Several research projects and interventions affect both individuals and the organisation. Primary prevention, for example, can be aimed both at improving the work environment and at enhancing personal efficacy and competencies. Alternative classifications, however, bare the same kind of problems. Another classification using the dimension individual/group versus organisation and a dimension stressing intervention distinguishing between primary prevention versus secondary and tertiary prevention, meets the problem where to place interventions that can be positioned in more than one quadrant (Bossche & Houtman, November 2003; Kompier, 2003; Kompier & Kristensen, 2001). Here, distinguishing between individual and organisational interventions is troublesome too, because group interventions can be aimed at both personal stress reactions and organisational redesign. Such indistinctness comes to the fore, for example, when one asks oneself whether installing team based work is a group intervention or an organisational intervention. Anyhow, we use our classification primarily to produce an inventory of the variation of approaches and to make this variety visible, and not as a system to exclude approaches.

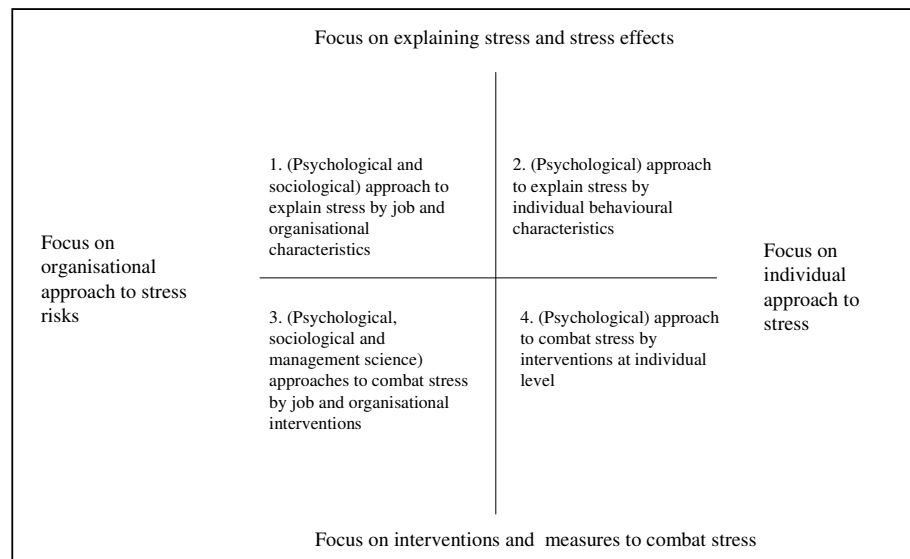


Figure 1 Approaches to research and combat stress and other psychosocial factors

The two dimensions lead to four different positions in Figure 1. All quadrants include 'psychological approaches' (related to the study of psychosocial phenomena) including epidemiological, medical disciplines, biological psychology and related disciplines. Quadrant 1 and 3 also exhibit contributions from 'sociological and management science approaches' (including ergonomics, industrial engineering, operations management). We assume that many (but probably not all) used stress / psychosocial factor approaches can be positioned in one of the four quadrants. The quadrants 1 and 2 are oriented to enhance (scientific) knowledge, whereas quadrants 3 and 4 have a direct relation with practical purposes and solving stress related problems. Looking at inter-

ventions, the aim of the PEROSH group is to identify approaches to combat psychosocial factors related to the two lower quadrants 3 and 4. Our main focus in this paper, however, is to treat Dutch *organisational* intervention approaches to combat psychosocial factors: quadrant 3.

With respect to the situation in the Netherlands we will go into three questions:

1. What kind of approaches are used in the Netherlands to combat psychosocial factors of stress?
2. What specific organisational interventions and measures are undertaken and what were their main incentives?
3. What are the results of interventions and measures?

Related to the first question, the Netherlands are facing many approaches. The most relevant organisational and non-organisational approaches from a general perspective are positioned in the presented Figure and only mentioned in the main text, because the main text deals with organisational interventions in quadrant 3. Therefore, approaches corresponding with quadrants 1, 2 and 4 and important approaches that cannot be placed in one quadrant, because these approaches overlap with several quadrants, are briefly discussed in Appendix B. With respect to the second and third question about organisational interventions we will describe a number of sub approaches that we are heading under the ‘Combat Workstress Approach’.

We will start in Section 2 with briefly mentioning the most relevant approaches in the Netherlands within all the quadrants of Figure 1. In Section 3 we will treat the organisational interventions and measures of the ‘Combat Workstress Approach’. The approach will be evaluated as well. In Section 4 we concentrate on the background of this approach, namely its design orientation towards psychosocial risk factors. Section 5 wraps up the statement paper with conclusions and discussion.

13.1.3 *Reading instruction*

The part dealing with the central aim of this contribution, organisational interventions in the Netherlands, is Section 13.3. For the reason that this intervention, the Combat Workstress Approach, is uniquely related to a design theory originating in management science a description of this design theory is given in Section 13.4.

To better understand how it became possible for this Combat Workstress Approach to take roots the Dutch political context of combating psychosocial risk factors will be highlighted in Appendix A.

For those interested in Dutch approaches with reference to quadrants 1, 2 and 4 we outline the main contributions in Appendix B.

Appendix A (main text) covers the evaluation criteria that were presented in the ‘Instructions for papers and programme’ (Beate Beermann, Evelyne Morvan, Peter Oeij, September 2004).

Appendix B (main text) lists the participating member institutes of PEROSH.

13.2 **Research and interventions**

13.2.1 *A general view*

We will mention the most relevant approaches in the Netherlands covering all four quadrants (Figure 2). It will be no surprise that there are many different ways how psychosocial factors are studied and dealt with in the Netherlands. The field we discuss is broad since we are dealing with the ‘psychosocial work environment’, which is the

domain of the content of jobs - including social and functional contacts - and the organisation of work (Kompier, 2003: 193). Psychosocial risks differ from material and physical risks, in the sense that psychosocial risks refer to aspects that affect employees cognitively, emotionally and socially. Major psychosocial risk factors are high job demands and lack of control options. Psychosocial factors, however, are part of a larger policy scope in which safety, health and well-being risks are tackled in the Netherlands. The framework for this policy scope is the Dutch Working Environment Act (issued in 1989 and renewed in 1998). The purpose of this act was to improve the working conditions of workplaces in order to reduce social costs by taking away the risks. In practice, attention was paid to organisational change and individual change separately as well as simultaneously.

It is difficult to determine the main trends how the community of researchers, consultants, policy makers and work organisations are approaching the issue of psychosocial factors. The most relevant (national) approaches are placed in Figure 2.

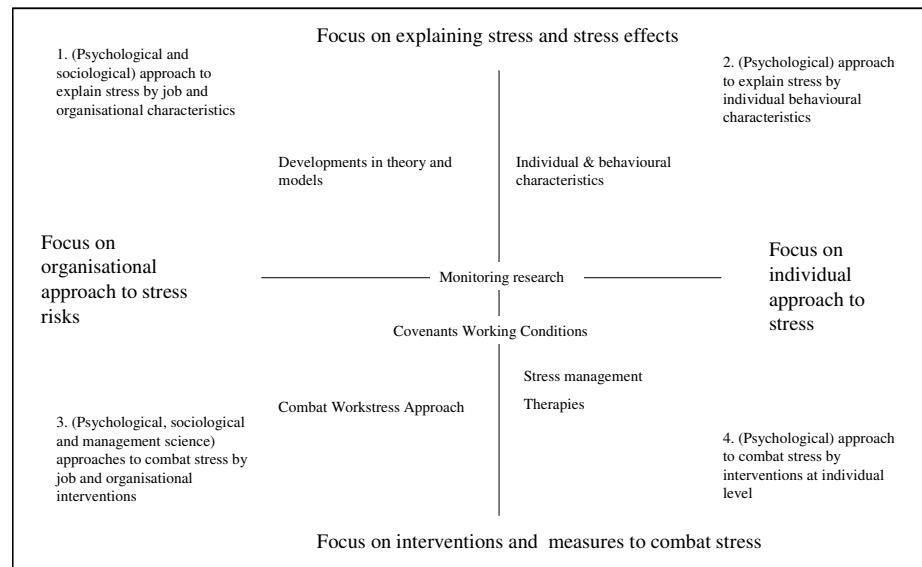


Figure 2 Approches to combat psychosocial risk factors in the Netherlands

When studying combating psychosocial risk factors in general several researchers observe that there is a stronger accent on changing the worker (reducing complaints) than on changing the psychosocial work environment (reducing exposure) (Bossche & Houtman, November 2003; Cox, Griffiths, & Rial-González, 2000; Semmer, 2003). The goal of interventions on the work environment is to eliminate, reduce or change job stressors ('primary prevention'), whereas individual stress interventions aim at altering the way employees respond to job stressors once they start showing symptoms of stress from getting sick ('secondary prevention') or treating employees who suffer from severe stress consequences, and rehabilitating employees to work after a protracted sickness absenteeism ('tertiary intervention') (Bossche & Houtman, November 2003; Kompier & Kristensen, 2001).

In quadrant 1 and 2 we placed approaches oriented towards enhancing scientific knowledge, of which the focus is on explaining stress and stress effects. Quadrant 1 houses theories and models with much attention for work characteristics, like the Demand-Control-Support model and the Effort-Reward Imbalance model. Quadrant 2 pays more attention to individual and behavioural characteristics, like coping style,

personality traits, and physiological responses. Again we stress that both quadrants show much overlapping research. An absolute division cannot be made. Quadrant 3 and 4 are concerned with the combat of stress and causes of stress. In quadrant 4 stress management and therapies are positioned. Here, there is overlap with quadrant 2 concerning clinical research and clinical interventions. In quadrant 3 the Combat Workstress Approach is positioned, which is an organisational intervention consisting of various sub instruments. It will be extensively discussed in Section 3. One intervention is crossing borders between quadrant 3 and 4, the Covenants on Working Conditions, a conglomerate of highly diverse industrial sector activities directed at individual and organisational interventions, dependent on agreements of social partners in each sector. These covenants are related to the Dutch social policy, which we will discuss together in Appendix A. One approach in Figure 2, monitoring research, is overlapping all quadrants. Monitoring is performed by governmental research bureaus, the labour inspection, sector research commissioned through Covenants on Working Conditions and by non-governmental research bodies. Appendix B provides a further description of approaches within this model, including a few not mentioned in Figure 2. Having said that we will now turn to the organisational interventions.

13.3 Organisational interventions: Combat Workstress Approach

13.3.1 *Quadrant 3: 'organisational interventions'*

Referring to 'organisational interventions' to combat psychosocial risks in Figure 2, quadrant 3, we will discuss the Combat Workstress Approach. The Combat Approach is not a single instrument and not a single approach, but can instead be seen as a number of different activities that are somehow interconnected. It consists of various sub instruments that are mostly used separately. Sometimes one or two sub instruments are combined in a project. Such projects are research and or consultancy projects in individual organisations. This approach is related to the Working Conditions Act (Appendix A).

Combat Workstress Approach

The organisational intervention concerning the Combat Workstress Approach is a combination of sub instruments (Figure 3).

The approach makes a distinction between two elements: the *process* of how to combat psychosocial risks and the *contents* about what should be done. A useful framework to combine these elements is offered by a step-by-step plan published in the Handbook Workstress more than a decade ago (Kompier & Marcelissen, 1990). This step-by-step plan distinguishes between five activities, namely first acknowledging that there are stress problems and something needs to be done; second to perform a diagnosis of the situation by establishing risk factors, risk groups and options for interventions; third to select a coherent set of measures; fourth to implement these measures in order to solve the stress problems, fifth and finally to evaluate the effects of the measures and plan follow up actions (see the left column in Figure 3).

The step about the diagnosis leaves a number of options for users. It is possible to diagnose problems at different levels. Figure 3 exhibits four levels. For each level there are different instruments to diagnose the stress related problems. These four levels are: 1] groups at departmental level, but possibly also the total working population or personnel of the organisation, 2] the organisation or its separate departments or teams, 3] the workstation or separate jobs, and 4] the job-person fit, that is the function, the per-

son and the relation between a person and his or her function. The sub instruments in Figure 3 can sometimes be used for more than one level, as we will see below.

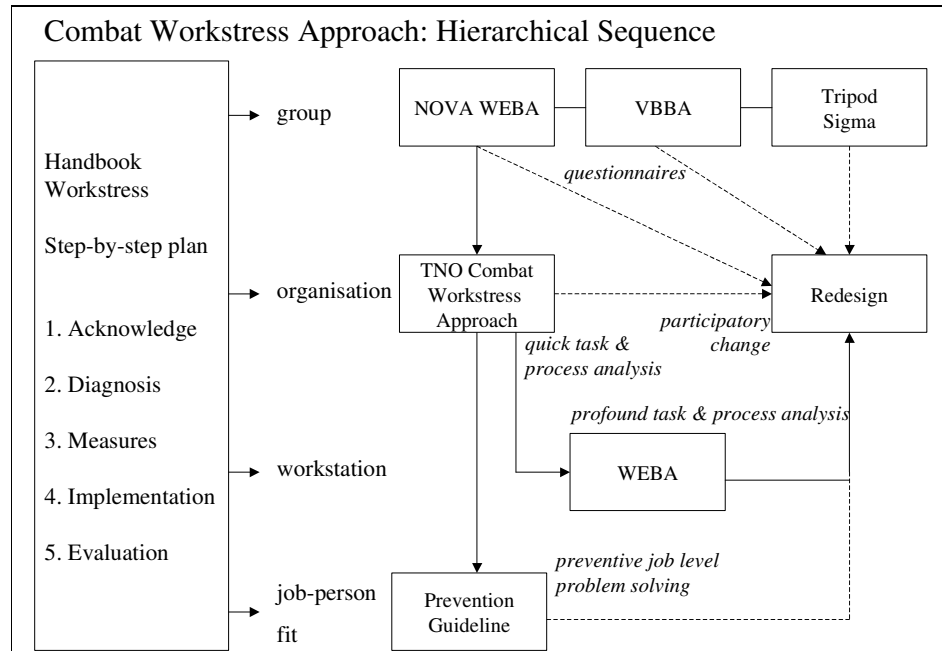


Figure 3 Hierarchical sequence of the workstress approach

The ideal way to work with the Combat Workstress Approach is to follow an hierarchical sequence, namely, starting by diagnosing stress related complaints by *groups* of employees with a ‘questionnaire’ (NOVA WEBA, VBBA or Tripod Sigma) which results in a listing of risk factors and risk groups. The next step is a ‘quick task and process analysis’ (TNO Combat Workstress Approach), meant to connect these findings to the *organisation* by asking yourself in which departments and teams the risk groups are located and at which point in the process of production or services, the primary process of the organisation, the risk factors are located. It is possible to proceed to the ‘redesign’ step from here after the questionnaires are analysed or as soon as the ‘quick task and process analysis’ is made. The object of redesign, embedded in a process of ‘participatory change’, can be threefold: the organisation’s primary process, the work process of departments or teams, and the contents of jobs. This includes changing policies concerning planning and control, ICT application, Human Resources, etcetera. Before redesign is taken up, the user can also go a step deeper and perform a ‘profound task and process analysis’ (WEBA). During this step expert knowledge from inside or outside the organisation is needed to make a systematic and thorough analysis of the relation between the primary process, the task structure in jobs and the stress risks at the level of a *workstation*. Such an analysis can be performed for separate functions but also at departmental level. Once this has been done the redesign step can be taken up. A final step at the *job-person fit* level is ‘preventive job level problem solving’ (Prevention Guideline). The objective at this job-person level is to retrospectively make an inventory of reasons why a person became long term sick and disintegrated from work by looking at both the design of the job as well as at individual characteristics. The purpose is that the organisation can learn from individual cases, why and where things went wrong, in order to prevent it to happen again to others.

The reason for this hierarchy is simple. General risks factors may affect all personnel, whereas differences in coping styles and coping capacities may lead to situations in

which some risks affect some individuals but not all. General risks should be combated by an approach that eliminates risks at their source. This benefits all personnel. Re-designing the work environment is such a structural approach, while stress management programmes, for example, are not. The first type combats causes and roots while the second combats effects and symptoms.

Group

Each level has its own sub instrument. At the ‘group’ level various questionnaires have been developed which provide a cross sectional overview of stress related problems. These questionnaires are addressed to employees (supervisors and non supervisors) and present information on how these respondents evaluate work environment characteristics and how they affect health related behaviour, like emotional exhaustion, intentions to sick leave, and job satisfaction. We briefly discuss three such instruments: NOVA WEBA, VBBA and Tripod Sigma.

The NOVA WEBA (‘NIPG-TNO OnderzoeksVragenlijst Arbeidsinhoud Welzijn Bij de Arbeid’, TNO questionnaire on job content and well-being at work) is a questionnaire to signal and locate stress related risks (Dhondt & Houtman, 1992; Kraan, Dhondt, Houtman, Vroome, & Nelemans, 2000). Results indicate objective risks caused by job contents and work organisation assessed at the level of the organisation as a whole, and divided into groups at departmental and functions. In most cases NOVA WEBA is used to diagnose at group level. Results also identify risk groups in the organisation (age, sex, function, educational background, etc.). The quality of NOVA WEBA is tested and meets scientific standards concerning reliability and validity. NOVA WEBA was tested on a data set of over 11 thousand employees, which is used as a reference for individual firms to compare their results with those of firms from the same sector at sector level or with other sectors. NOVA WEBA consists of the following 14 scales (156 items) divided over four themes:

Control requirements / Job demands: -quantitative job demands, control problems
 Control options: -job autonomy, contacts, organising tasks, information provision
 Job composition: -completeness of functions, cycle times, demanded craftsmanship, cognitive complexity / mental effort
 Assorted risks: -job uncertainty, time constraints, job-education fit and job-experience fit, emotional effort / exhaustion

VBBA (‘Vragenlijst Beleving en Beoordeling van de Arbeid’, Questionnaire experience and evaluation of work) is a questionnaire to more or less objectively assess if employees impend to drop out due to psychological complaints as high mental strain (mental exhaustion) and burnout (Veldhoven & Meijman, 1994; Veldhoven, Meijman, Broersen, & Fortuin, 1997). VBBA is owned by SKB Centre for Expertise on Work and Health and applied by various specialised workplace health and safety agencies (‘Arbodiensten’). These agencies support organisations to execute legal obligations resulting from the Working Environment Act, like medical control and physical check ups of employees. SKB has a reference dataset containing more than 70 thousand employees. VBBA consists of 14 scales (108 items):

work tempo and work quantity, emotional effort / exhaustion, job variety, learning opportunities, job autonomy, relation with colleagues, relation with direct supervisor, participation / involvement, uncertainty about the future, job satisfaction / pleasure in working, organisational commitment, need for recovery, worrying behaviour

Tripod Sigma is a stress management tool to be used by managers (Nelemans, Wiezer, Vaas, Gort, & Groeneweg, 2003; Wiezer & Nelemans, 2004; Wiezer, Nelemans, Groot, Gort, & Vaas, December 2003). More explicit than NOVA WEBA and VBBA the stress related problems from employees are related to the primary process, which should clarify the interest for managers to combat their employees' stress risks. Although the questionnaire is the heart of the method (which explains its position in Figure 3), there are a number of sub instruments like those also incorporated in the general Combat Workstress Approach, such as a quick scan, a diagnosis by an expert, a diagnosis from individual workstress drop outs, and a management workshop. Tripod Sigma questionnaire consists of 8 internally validated scales (166 items):

Basis risk factors (for stress):

Procedures, Hardware, Organisation, Communication, Training and skills, Incompatible goals, Social support and individual defences

The survey results of all three methods should give an overview of risk factors and risk groups. Although all questionnaires ask individuals to evaluate their work, NOVA WEBA and Tripod Sigma are more focused on organisational causes for stress risks, while VBBA accentuates health effects on the individual and individual stress reactions. Compared to NOVA WEBA and VBBA, Tripod Sigma is, moreover, oriented towards managerial issues, and used in a multinational, English speaking, context.

Organisation

A second step is a diagnosis at organisational level. Once the risk factors are determined, it is important to analyse the source from which they arise: what are the roots of these risks that may cause stress reactions by individuals? 'Organisational level' can be understood in different ways: the organisation as a whole, the separate departments, and the separate teams. It simply means that users can choose the entity they wish to investigate. The sub instrument for this level is the TNO Combat Workstress Approach (TCWA) (Lourijzen, Kleijn, & Dhondt, 1999; Oeij, Frielink, & Jongkind, 2003). TCWA first deals with the process 'how' stress risks should be combated. Its approach is participatory which means that its start is to jointly assess how to tackle the issues, e.g. deciding whether to use a questionnaire first or to start with analysing the primary process, or deciding to start with a diagnosis or skip that when enough information is at hand and proceed by looking for solutions, etcetera. At a later stage TCWA puts a focus on 'what' should be done. In most occasions, that is how it has been used, a two-step approach is used, consisting of diagnosing causes for work stress and generating solutions for these causes.

The main activities in diagnosing the causes are to make an inventory of tasks performed and to make an inventory of control problems and process disturbances which prevent the execution of tasks successfully. Attention is given to the balance of norms or standards (job demands) and control options. The central activities in generating solutions is to identify causes of control problems and process disturbances, to formulate solutions for these causes and to select measures to solve control problems and process disturbances. This all leads to an action plan, followed by implementation of measures and, later, by evaluating the effects of these measures on a sustainable way of solving the control problems and process disturbances.

TCWA is very much a tool for consultative problem solving and as such well suited for process consultancy. The method consists of an agreed number of sessions ('workshops'), for example with employees from a department, and their manager. In this sense TCWA is not an expert tool, telling the client what problem he or she may have. The participatory approach guarantees a maximum client input. This is also why it is a

‘quick task & process analysis’ instead of a ‘profound’ one. But ‘quick’ here does not mean ‘dirty’.

The main sub tool to diagnose the presence of control problems and process disturbances is the fish-bone technique. This technique offers the client possible causes for control problems and process disturbances, by more or less asking, “hey, is this control problem or process disturbance caused by this source [source mentioned]?”. Figure 4 presents the fish-bone and the possible sources or causes for control problems and disturbances (Oeij, Frielink et al., 2003: 7).

The redesign step is also positioned at the ‘organisation’ level in Figure 3, but will be discussed in Section 4, along with its theoretical background in management science. For now it suffices to state that redesign preferably is undertaken as participatory change, and that it focuses either on the primary process, departments and jobs, or a combination of these.

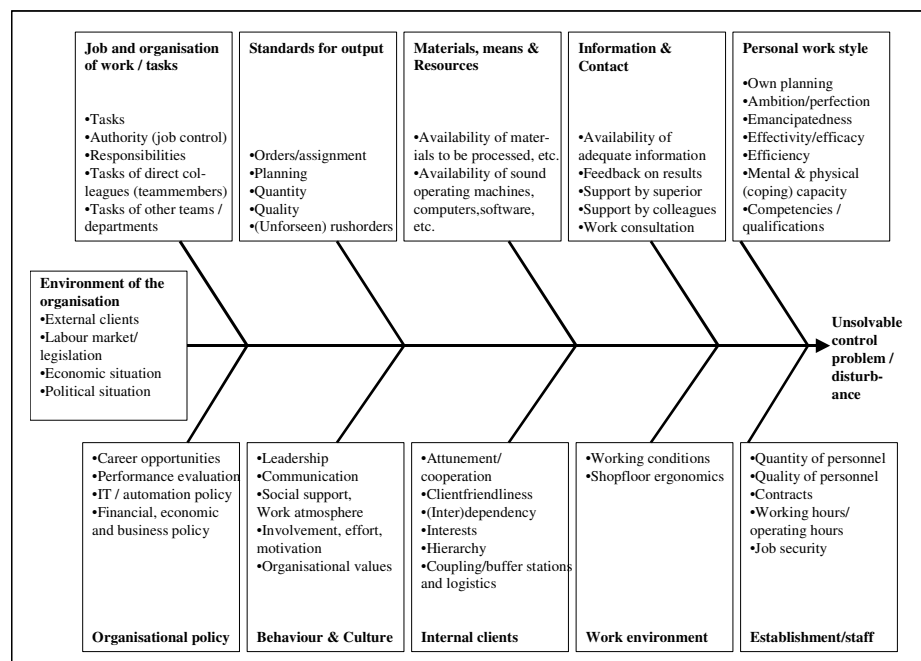


Figure 4 Fish-bone technique to assess control problems and process disturbances

Workstation

The workstation is the location where the employee performs his or her tasks. Since locations are often not fixed (e.g. bus drivers, sales people) jobs are synonymous for workstations in this perspective. There is a variety of instruments to study task and process analysis in a profound manner, but there is one that integrates both, namely the WEBA-method. WEBA stands for ‘Well-being at work’ (WELzijn Bij de Arbeid) and assesses the quality of work in terms of risks well-being, namely the risks for stress and the lack of opportunities for learning (Dhondt & Vaas, 2000; Pot et al., April 1990; Pot et al., 1989; Vaas, Dhondt, Peeters, & Middendorp, 1995).

A WEBA analysis consists of six steps. The first step is a task analysis of a job resulting in an inventory of executing, preparatory, organizing and supportive tasks. In the following step the tasks are evaluated against well-being conditions, namely work cycle time, cognitive complexity, autonomy, opportunities for contact and provision of information. In the next steps 3 and 4 an analysis is made of control problems and process disturbances by investigating the balance between control capacity (job con-

trol) and control requirements (job demands). Unsolvable control problems are stress risks, while solvable problems provide opportunities for learning. Sources for unsolvable control problems are norms (output standards), material (resources to be processed), means (tools, machines, information to process with), operations (actions to be executed), feedback on results, and environment and interactions (social and functional contacts). In step 5 the job is evaluated according to seven criteria: completeness of tasks, sufficient organising tasks, sufficient non short cycled tasks, balance of easy and difficult tasks, sufficient opportunities for contacts and sufficient information. Step 6 consists of reporting the results followed by a discussion about priorities and measures considered (Pot et al., April 1990). In the mid nineties the WEBA method was expanded by a redesign method and a process approach for organisational renewal (Vaas et al., 1995).

Although we positioned WEBA at the 'workstation level', like wise analyses can be done for all functions in a department. In that case WEBA is applied at departmental or team level. It is even possible to apply this instrument for all functions in an organisation. But since its application is labour intensive it is advised to have a WEBA analysis preceded by a questionnaire in order to determine risk groups and risk departments first.

Take notice that the WEBA method was originally very much an expert tool. It was not meant to be that way, but using the tool demanded expert knowledge. The new version is easier in use but still time consuming. The TNO Combat Workstress Approach and the NOVA WEBA questionnaire are both derived from the WEBA method. An abbreviated version that combines the WEBA method and TCWA is the Job Stress Self Diagnostic Method (Oeij, 2002).

Job-person fit

The Prevention Guideline is an instrument for the (primary) prevention of absenteeism due to psychological problems (Franck & Klein Hesselink, October 2003; Franck & Wiezer, July 2004). The guideline is a retrospective method to study 'critical incidents'. It offers supervisors and their employees a conversation model to look back why the employee became long term sick due to psychological reasons. The conversation model helps users to determine the causes of stress risks that were the causes for experiencing stress and for the person's stress reactions, eventually resulting in the dropping out of work of the employee. Subsequently supervisor and employee discuss possible interventions that could have prevented the employee from getting sick. In a next step the discussion is continued at the level of the department and team, focussing on what can be learned from the past to benefit the future. At departmental level the best interventions and their critical success factors are assessed and anchored. Finally, the critical success factors are monitored at organisational level and coupled to a cycle of continuous improvement.

The Prevention Guideline is also based on the line of reasoning developed for the Working Environment Act as in WEBA and other instruments. In the first step about assessing the major stress risks five areas of attention are tackled: high job demands and disturbances in the work process, conflict relations, limited career opportunities, work-life unbalance, and exposure to violence, aggression and suffering. Step two is an assessment of control options offered by the job design and by functional contacts with colleagues and the supervisor(s). This is done by a confrontation of the problem(s) of the employee with respect to the observed stress risks with possibilities to solve the problem(s). Job redesign is required if there are no possibilities to resolve the problem with the existing control options. In step three solutions are discussed and assessed at departmental or team level during a team meeting. Colleagues of the psychologically incapacitated employee analyse their own work to look for more and alternative solu-

tions that may be helpful as well. The result is a set of measures which carry the commitment of a team as a whole. Step four is to translate solutions into critical success factors by making them specific and measurable. Critical success factors should help employees and managers to reach the organisation's goals. Critical success factors can give an adequate response to the question "what is needed to prevent the now missing solution from being absent in the future?" The fifth step is to anchor the critical success factors by having them incorporated in and monitored through management information systems. Critical success factors, i.e. specific activities, are monitored and evaluated this way and related to performance criteria of individuals and organisational targets. Criteria are, for example, absenteeism rates, job satisfaction and productivity rates. Although this method starts with an individual case, it is actually not restricted to an individualised 'job-person fit' but goes beyond that in assessing solutions which benefit all. Control options, the main solutions, are of course related to job design and not to individuals.

13.3.2 Evaluation

To evaluate the organisational interventions by the Combat Workstress Approach we will focus on a selection of criteria that were formulated by the PEROSH group to select and judge relevant approaches (see Appendix C).

Criteria to evaluate approaches:

Effectiveness
 Approach characteristics
 Approach development
 Feasibility for replication

A point to be mentioned beforehand is that it has never occurred that all sub instruments were used simultaneously in one project. We do not intend to evaluate each sub instrument separately, because that would demand too much space. The evaluation's main purpose is to give the international reader the possibility to assess whether the Combat Workstress Approach is applicable in his or her country.

Effectiveness

Clear cut evidence-based effects whether the approach has resulted in reducing psychosocial risks are not available. Evaluation research in this *specific* field of organisational interventions related to the Combat Workstress Approach is almost completely lacking. Only recently, a first evaluation research project was commissioned by the Ministry for Social Affairs and Employment. From a *general* perspective, the Dutch labour inspection carries out research on organisational interventions against the exposure of risks (Ministry for Social Affairs and Employment, 2004).

The research findings on the prevalence of risks and stress reactions, however, are rich. All questionnaires determine risk groups and risk factors and their effects quite satisfactorily with respect to scientific standards. The questionnaires give abundant statistical information for diverse populations, especially the VBBA and, to a lesser extent the NOVA WEBA. Organisations using NOVA WEBA (Kraan et al., 2000) or VBBA can compare their results to findings from a 'reference data set'. Most of these research findings are not public. A point to mention is that the VBBA reference data are not based on a representative sample of the working population, but on findings of sectors that already used the VBBA questionnaire. Secondary analysis are performed, however, with aggregated VBBA data (Veldhoven & Broersen, 1999). Tripod Sigma has

thus far been exclusively applied by one multinational company (Nelemans et al., 2003).

The TNO Combat Workstress Approach (TCWA) has been applied to dozens of organisations in private and public sectors (Frielink, 2001). It gathers qualitative information. Whereas TCWA has been successful in diagnosing psychosocial stress factors and formulating solutions, it was less effective in getting measures implemented. Organisational interventions that were implemented were in most cases restricted to HRM oriented measures. Organisational redesign and even job redesign were scarce. A central reason that explains this partly failure are that the focal points within organisations (i.e., commissioners and interlocutors) are HRM functionaries without much influence on strategy and operations management. Top management and operations management were not involved fully in the projects and could not be committed to the research outcomes to take action (Oeij, Frielink et al., 2003). A promising new offshoot therefore is Tripod Sigma, which stresses the particular role of representatives from operations management in combating stress. Besides the questionnaire, a TCWA like approach is available within Tripod Sigma. Results on organisational interventions with this sub instrument are not available yet.

In short, TCWA is very helpful with respect to its content (i.e. diagnosis). When applied one needs to assure top managements' involvement. This is becoming difficult because, due to today's economic stagnation, management is more focussed on productivity results than on stress reactions of workers. The labour market situation does not stimulate employers very much to investigate in combating stress, since the supply of unemployed candidates is growing. Should management have a longer term view on these matters they would probably recognize that combating stress at its roots is beneficial for the productivity of the organisation in the end.

The application of WEBA has been limited due to its labour intensive use and complexity. An evaluation of the method based on 20 cases draws the following conclusions (Rozemond, Peeters, & Vrooland, 1996). The purpose of applying WEBA was to improve the quality of work in most cases, and not to improve the quality of the organisation. The latter was often too radical. Results indicate that WEBA works very well to enhance the quality of jobs, particularly in increasing control capacity and in decreasing control problems. Effects measured are diminishing employee complaints and personnel recruitment problems and more employee involvement with the working process. Users applying WEBA comment that the positive effects were larger than they expected. Examples are saving costs, higher quality, more flexibility, better logistics, enhanced innovative capacity, lower sickness absenteeism, less division of labour, more team based production. A version of WEBA produced for the education sector was relatively widely used (WEBO, *Werkdruk Bij Onderwijstaken*, Workload of educational tasks). Despite the need to be trained in the methods' background before being able to apply WEBA, its vision on and definitions of well-being were widely disseminated in the country (Goudswaard & Mossink, 1995). In addition to critical remarks concerning WEBA's complexity and time consumption is its interpersonal variation in the use of the method ('low inter-evaluator reliability'). Based on its application on one occupation, research shows that evaluation criteria to assess the job's stress risks and learning opportunities were applied inconsistently between evaluators (assessors) (Dhondt, 1993). Nonetheless, in those occasions the WEBA was applied it resulted in a thorough analysis of jobs, functions and departmental work processes and a thorough insight of the relation between the primary process and stress among users. WEBA results in profound qualitative analysis. This helped to no longer see stress as a problem of individuals caused by personal and behavioural characteristics exclusively.

The Prevention Guideline is developed only recently. It has been tested in two companies (Franck, Wiezer, & Vaas, July 2004). The conversation model facilitated the users –employee and supervisor- in making a diagnosis. To stick to this conversation protocol proved to be more difficult when applied at the level of the team when a further diagnosing of work related stress was intended. Another point to mention is that users face difficulties in developing solutions to combat work related stress, particularly when solutions are related to sources beyond the level of the department or the span of control from the supervisor. The Prevention Guideline leads to qualitative information.

Finally, we can say that the majority of readers of the Handbook workstress judge this work, that includes the step-by step plan (Figure 3), in a positive manner (Kamphuis, Huurne, & Poppel, June 1992).

Approach characteristics

The Combat Workstress Approach has, despite its multi-component character, clearly defined goals. This clarity depends, however, on the way how it is used within organisations, namely if users themselves have defined clear short-term or long-term goals. It is therefore important to define the goals to be achieved preceding the application of the instrument or its sub instruments. Once the goals are set out clearly, one can choose among the different sub instruments.

In order to establish if targeted changes in psychosocial factors are realised, it will be necessary to make agreements on the content and duration of a project. In almost all Dutch cases the project consists of analysing the psychosocial risk factors and making recommendations for interventions at individual or organisational level, without including the evaluation of these interventions in the project. A project duration varies between approximately three months to two years. Shortness of time and budget prevents a ‘complete’ approach from a to z. Evaluation if changes have resulted in reducing risks is therefore scarce, leave alone whether it is established if psychosocial target factors were realised. The best to happen is investigating if workstress or workload complaints, absenteeism, etcetera, have diminished among personnel afterwards. Another reason why individual companies do not often use a ‘pre-test – post-test’ approach is possibly that such is already done more or less in the cycle of monitoring health and safety risks to which they are legally bound by the Working Environment Act.

Approach development

The approach is built upon sound scientific applied knowledge from disciplines such as psychology, sociology and management science. The Combat Workstress Approach has been designed by a multi-disciplinary team. Strikingly, no end-users were involved in designing the instruments (with the exception of elements of the Prevention Guideline). Although the assumptions are rather clear, especially its management science background is not very easy to understand (see Section 4). The questionnaires and the TNO Workstress Approach are the mostly used sub instruments.

Feasibility for replication

The Combat Workstress Approach is potentially transferable to other countries. It remains to be seen of course if the specific concepts and questionnaire items fit in other than Dutch (language) cultures (Tripod Sigma is in English). The sociotechnical theory background, however, is widely used in Scandinavian countries and in Great Britain. Besides, sociotechnical theory is based on systems theory and as such may be relatively easily transferable to other countries. The Combat Workstress Approach is a

very flexible method and adaptable to local situations because of its modular character. It would nevertheless not be correct to say that it is low in complexity. Only when users are trained in its applicability it will become practical, manageable within local resources, and reasonable as regards manpower and financial investments.

The most advantageous characteristic of the Combat Workstress Approach is its unique combination of psychological stress theory and organisational design theory which enables users to ban psychosocial stress risks with an organisational source in a sustainable manner. It not only takes diagnosing and solving psychosocial risk factors into account, but it also incorporates a method for organisational redesign from a management science perspective. We will discuss this method in Section 4.

Concluding remark

Stress complaints are still major problems. Although working under time pressure is decreasing among the Dutch working population (33% in 1999 to 28% in 2003), this is not the case for working in a high tempo (remained stable at ca. 40%) (CBS, 2004: <http://www.cbs.nl/nl/publicaties/persberichten/2004/pb04n102.pdf>). Should we conclude that the Combat Workstress Approach has not been very helpful in combating stress risks? We do not think this would be the correct inference. First because stress complaints are affected by many variables. Second because the economic stagnation has resulted in the loss of a substantial number of jobs but not to a decreased intensification of work. The environmental demands for firms and companies to be competitive did not diminish, on the contrary. Besides, employers usually hesitate in such circumstances to invest in personnel, restricting the work force to a minimum. We feel this rather enhances than reduces stress (cf. Dhondt & Kraan, 2001). Moreover, when comparing measures against the exposure of a large variety of work environment risks, workers have the strongest wish for interventions against workload and workstress (52%), followed by interventions against RSI (40%) (Ministry for Social Affairs and Employment, 2004).

13.4 Design oriented approach to combat stress risks

13.4.1 Introduction

The first designed sub instrument of the Combat Workstress Approach is the WEBA. The WEBA method was developed by three Dutch research institutes to make the Working Environment Act operational with respect to the issue of well-being. It was learnt from Karasek that there is a notion of balance between job demands and job control (Karasek, 1979). The answer to demands too high or control too low was to increase the capacity to control in jobs. From Hacker it was learnt how jobs could be designed in order to be occupationally complete (Hacker, Iwanowa, & Richter, 1983). Occupationally complete jobs require possibilities for learning, and learning becomes possible if jobs consist of tasks that combine the application of occupational, organising and communicative skills. Therefore, learning jobs should be a 'logical coherent entity' of preparatory, executive, supportive and organising tasks that vary in cognitive complexity (simple and difficult), provide autonomy of choice from solutions one can learn from (control capacity), and facilitate contacts to exchange information. From De Sitter it was learnt how stressors in the working environment are related to the primary process in production and services and how control capacity can be enhanced (Sitter, 1981; Sitter et al., 1986). The answer to eliminate stressors was to redesign the primary process. The implication was that Karasek's psychological control-demand balance at

individual level had a management science equivalent in Modern Sociotechnology at the level of the design of the primary process.

The Combat Workstress Approach combines all three insights. Whereas the contribution of Karasek and Hacker is quite clear and well-known to most users (see Christis, 1998; Pot et al., April 1990), this is not always the case with De Sitter's Modern Sociotechnology. Modern sociotechnology is briefly outlined first, and the usefulness of its design theory is argued subsequently (Eijnatten & Zwaan, 1998; Sitter, Hertog, & Dankbaar, 1997; Sitter, Naber, & Verschuur, 1994, 1998 [2e]; Sitter et al., 1986; Sitter, 1993, 1995).

13.4.2 *Modern Sociotechnology (MST)*

A central starting point for sociotechnical design of organisations is the 'law of requisite variety'. This law states that variety can only be controlled by variety. With respect to organisations this means that in order to meet the complex demands of the environment of organisations – markets, customers, competition, regulations, etc. – the organisation must have the flexibility to respond in such a way that it is staying in control. Control capacity must balance control requirements at all levels: from strategic positions to performing functions. To arrive at such situations the requirements to control can be reduced or the capacity to control can be enhanced. Reduction of requirements to control can be realised by the (re)design of primary processes to make them low in complexity. The classic example is a flow-based primary process with a minimum of requirements to gear activities to one another, called a streamlined production structure. The way to minimize gearing requirements is to do the opposite of Adam Smith's division of labour as in Tayloristic organisations. Instead of dividing tasks into specialised executing (doing) and organizing (thinking) tasks, tasks are grouped together to create meaningful work. To arrive at a streamlined structure one starts with the 'streamlining of orders', then streamlines the process of industrial or service production, followed by streamlining managing and regulating tasks, and finalizing by clarifying the employees' tasks which are formed around the execution of the assignments, that are the translation from streamlined orders to work place tasks. We shall try to explain this core idea of organisational (re)design in MST when an organisation has to change.

When organisations face increasing uncertainty and complexity they can be redesigned in order to survive. Some organisations restore the fit with this external complexity by increasing internal complexity. Sociotechnical solutions deal with external complexity by reducing the need for internal control and coordination. Such organisations streamline their primary process and decentralise control options to teams with broad tasks. This strategy is called 'from complex organisations with simple jobs, to simple organisations and complex jobs' (Sitter et al., 1997).

MST aims at 'integral design' because its purpose is to meet all 'functional requirements' at the same time: flexibility, delivery time, throughput time, product / services quality, innovative capacity, quality of work, good industrial relations, pollution control, etcetera. In other words it should benefit organisational goals as well as the health of employees. It does so by designing an 'architecture' that integrates 'social' (human) and 'technical aspects'. It uses the system's theory perspective input, throughput and output. The designed structure of the organisation is able to handle a 'multitude of input-output functions' and creates the capacity to flexibly process a 'multitude of interactions between partners within the system and in its environment'. The structure of the organisation must have the capacity to be as flexible as demanded by its environ-

ment. This ‘controllability’ is maximized as soon as possible disturbances are reduced to a minimum (the ‘probabilities of interference’ are balanced by the ‘capacity to reduce interference’). In other words complexity is reduced and control capacity enhanced.

MST states that the complexity of an organisation is caused by the number of internal and external relations and their variability in time. Bureaucracies are examples of complex organisations. Impending disturbances and variety can be reduced by increasing control capacity. Control capacity can be increased when opportunities for *internal* process variation are available. Organisational design realises this by streamlining the order flows. Streamlining makes the organisation ‘simpler’ and limits impending variety (Figure 5). External variation stems from rapid changes in the demand for product mix and volumes. The impact of this variety is reduced by introducing ‘parallel flows’ through ‘parallelization’. Parallelization results in an exponential reduction of input complexity. An example of parallelization is creating a primary process in which the flows correspond to product market combinations: ‘dedicated’ production flows.

Internal variation is caused by the number of relations or interfaces between performance functions in the chain between input and output. In others words, variation is a consequence of necessary contacts between employees and departments within the primary process. These couplings makes the process inflexible and vulnerable for disturbances. Line structures with highly specialized departments and employees are a good example. Internal variation is reduced by reduction of interfaces with the help of ‘segmentation’. Segmentation of individual flows aims to reduce internal variety by selective clustering of performance functions into segments with a minimum of interfaces (Figure 5). Performance operations with a maximum of mutual interdependence in direct production or the making of services are clustered: one example is to cluster performance functions with support and preparatory functions.

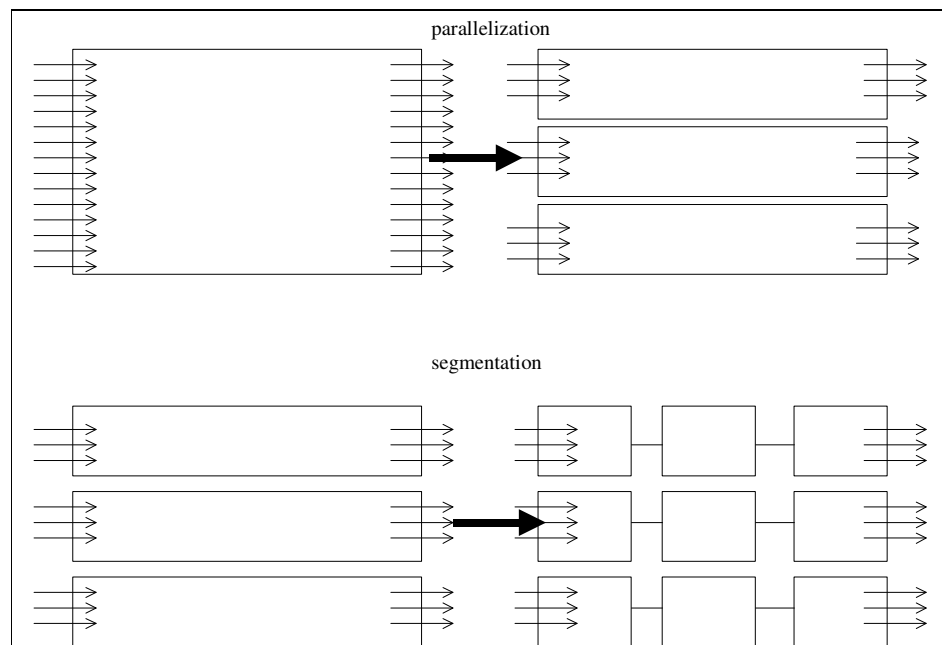


Figure 5 Parallelization and segmentation of order flows within the primary process (Sitter et al., 1997: 511)

MST does not favour a detailed division of labour by splitting functions into (specialised) tasks and tasks into executing and controlling (‘managing’) tasks as is used in

Tayloristic modes of production. On the contrary. The ‘internal structuring of segments’ above leads to ‘complete’ jobs in which a person can solve problems as they occur, and can learn from doing so. Such jobs are characterised by a high quality of work. Grouping such functions can lead to ‘whole-task groups’ (semi-autonomous teams). Decentralisation of control to the lowest organisational levels as possible - i.e. tasks - corresponds with self organisation principles that we can see in teams, such as ‘redundancy of functions’ (functional flexibility and broad employability), ‘requisite variety’ (a broad view and insight in the primary process), ‘minimal critical specification’ (subtle cooperation of employees) and ‘double loop learning’ (creative learning and innovative performing)(Kuipers & Amelvoort, 1990: 58).

MST is referred to as Integral Organisation(al) Renewal (IOR) (Eijnatten & Zwaan, 1998; Sitter et al., 1997) because it is a design (oriented) theory for four reasons. It uses redesign to combat structural and process problems of firms; it designs alternatives and has methods to compare alternatives; it has a participatory approach and pays attention to the process of design (strategies, methods, power relations); and it is concerned with implementation and its impacts. Compared to Business Process Reengineering IOR lays a stronger accent on the democratic participation of the involved organisation members and compared to Lean Production IOR has a more elaborated set of design rules. On the other hand, IOR is also quite complex and labour intensive, because integral design is not easy. WEBA nevertheless also embraced integral design, that is, improving both the quality of work and the quality of the organisation, and includes a redesign manual based on MST (Peeters & Mossink, 1995).

Although statistical data are scarce IOR is broadly used in Dutch industry and service-delivery organisations. At the end of the nineties more than 200 sociotechnical projects were systematically documented in the literature. As results the following maximum measures are reported: 70% throughput time reduction, 60% cost reduction through smaller stocks, 50% defects reduction, 40% customer complaints reduction, 24% reduction of indirect work, 15% increase in productivity. Besides these quantitative results, workers reported improved commitment, involvement and a more stimulating organisational climate (Eijnatten & Zwaan, 1998: 305-306).

13.4.3 *Relation between psychosocial risks factors and MST*

The WEBA method regards stress risks as a function of the design of the work organisation, which, following the hierarchy, eventually results in the design of jobs and tasks. Sociologically speaking stress risks in this sense are a matter of division of labour. WEBA bridges between quality of work and redesign of jobs by relating the psychological insights of Karasek and Hacker to management science of integral design theory (Christis, 1998; Pot et al., April 1990). Stress risks are control problems during the work performance that are caused by the work organization and that cannot be solved by the employee, nor by him- or herself, nor with the help of others. Stress risks may result in stress effects, which partly depends on the individual’s coping style. Put shortly, not the control problem is the issue, but the lack of control capacity, implying the need for a model that conceptualises stress risks as a dynamic balance between control capacity and control demands. Dynamic, in the context of continuously adjusting the balance between changing work situations and the selection of problem solving control opportunities. Internal control capacity refers to possibilities to vary one’s work in speed, working method, order of actions, and so on, while external control capacity is the possibility to consult others or get the help form colleagues. Job control is mainly about autonomy, functional contacts, and having influence on organizing tasks like planning and division of assignments.

WEBA uses a transformation model of input, throughput and output to analyse jobs and control problems in jobs (Figure 6). Control problems related to job content can have different sources. The source is the location in the primary process (at the level of jobs related to the complete work organisation) where stress risks originate. The seven sources are:

- material that needs to be processed contains flaws (resources, information, humans, animals). Take notice that a cook processes resources, a policy maker processes information and a doctor processes people;
- norms that need to be achieved are unfeasible, like the quantity and quality of what is to be produced;
- information about the goal of the job and about the assignments are inadequate, too late, or incomplete;
- means that are used in processing the material like machines, tools, computers, time and (human and animal) capacities and power, contain defects and flaws;
- interactions with the network of persons that can have an influence on executing the tasks, like colleagues, clients, and the public, hinder instead of facilitate the processing of operations;
- feedback on the results from supervisor, colleagues, clients and customers is inadequate, too late, or incomplete;
- operations, which is the activity of processing itself, contain unexpected and unsolvable disturbances.

If an employee is confronted by a disturbance of any kind, this transformational model helps to locate the source of the disturbance not only in employees' job (lower part of Figure 6), but also in the primary process through search conferences.

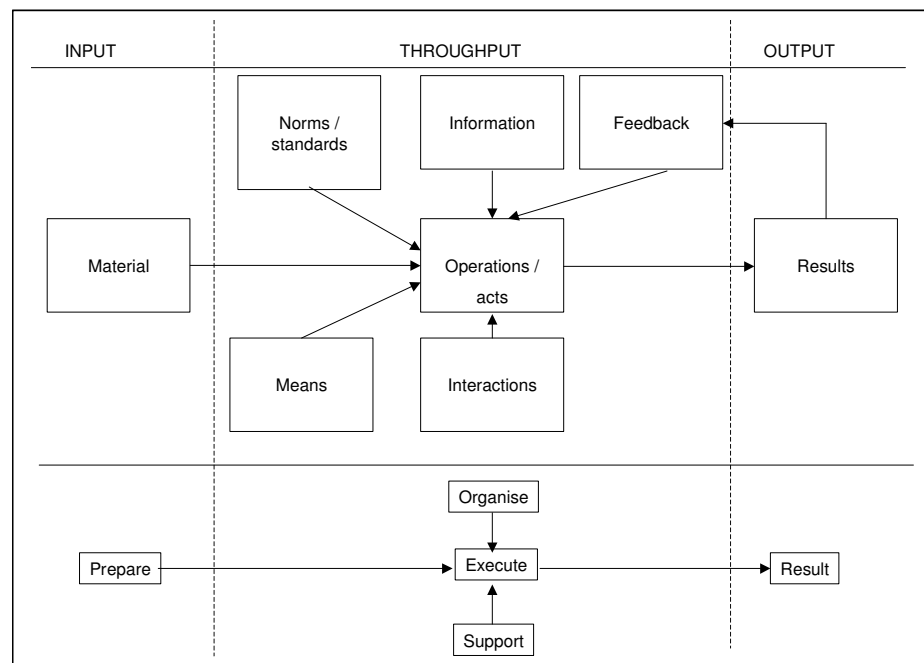


Figure 6 Transformation model: sources for control problems and system functions of the job (Derived from Pot et al., 1989; Vaas et al., 1995).

It should be clear by now that control capacity determines whether control problems can be solved, and if not, that these control problems are psychosocial risks to every-

one, resulting in stress reactions dependent on the individual's degree of coping capacity.

13.5 Conclusion and discussion

13.5.1 Conclusion

We started with three questions:

1. What kind of approaches are used in the Netherlands to combat psychosocial factors of stress?
2. What specific organisational interventions and measures are undertaken and what were their main incentives?
3. What are the results of interventions and measures?

Many different approaches to combat psychosocial factors can be found in the Netherlands. In each category of Figure 1 there are approaches, which are described in Appendix B. We discussed the Combat Workstress Approach as the main example of approaches to combat psychosocial factors by organisational interventions in this contribution. This approach consists of various sub instruments. Its central goal is to assess and eliminate the sources of problems in the work environment (question 1).

Specific organisational interventions undertaken with respect to influence stress risks at the source in the organisation where they originate, are organisational redesign and job redesign. These are the most far going and structural interventions. Other interventions include reformulating HRM policies, working time schedules, flexibility and labour force, ICT policies, organisational behaviour, enhancing competencies, personal efficacy. The incentives for these interventions are twofold. Unions favoured combating stress risk in the interest of workers. Management agreed on these issues in exchange for more flexibility, improved productivity and lower costs for absenteeism. But this does not guarantee profound organisational change. Sometimes the only feasible solutions do not go further than combating effects instead of causes (question 2).

The results of the approach are difficult to measure, which is a weak point (see also Bossche & Houtman, November 2003). This varies, however, for the different sub instruments. Most sub instruments gather qualitative information; the questionnaires gather statistical data. Evaluating the effects of the intervention following the phase of research and diagnosis is in most cases not incorporated, as are collecting statistical details of effects. Finally, the objects of change differ between cases (i.e. organisations applying the approach). Interventions can be directed at a variety of goals, sometimes at the same time. Examples are the improvement of job contents, ergonomic conditions, communicational behaviour, leadership, the primary process, etcetera. This hampers to determine which effect is caused by what intervening factor, let alone to predict desired effects. In addition we are saying that not all of these projects were concerned with reducing stress, but, for example, also with enhancing the quality of work, team based cooperation, or reducing absenteeism, to mention a few.

The Combat Workstress Approach is helpful in enlarging the insight of causes for stress risks among employers and employees. Other, probably even more, factors influencing this enhanced insight, were the obligations resulting from the Working Environment Act and the Dutch social policy in general (Appendix A). More and more, actors and stakeholders regard psychosocial risk factors as work related nowadays. Although still many others -especially employers- insist that psychosocial problems are exclusively related to individual characteristics and behaviour (Schaufeli & Kompier, September 2002: 33). While Europe consequently spends ever more effort in the

study of organisational causes for stress -but still not enough-, the Americans seem only just to have begun doing so (Landsbergis, 2003). The Americans use a multifaceted approach to stressor prevention and addresses organisational topics since more than a decade, including job content, work load and work pace, work schedules, career policy, social environment (Sauter, Murphy, & Hurrell, 1990), but they less recognize the importance of structural redesign. Europeans go a step further with workplace interventions (e.g. the Nordic countries and United Kingdom research groups in Nottingham [Cox et al], Sheffield [Warr, Wall et al] and Manchester [Cooper et al]) but none of them so far seems to be involved in structurally redesigning the primary process, as does modern sociotechnology (including the risk management approach in Britain, cf. Cox, Randall, & Griffiths, 2002). Maybe this is because the design of primary processes is the field of engineers and operational management, and not so much of practitioners and professionals from the safety and health disciplines (see on the role of psychologists e.g. Kompier & Cooper, 1999: 3). Besides, sociotechnology's goals go beyond stress issues alone.

The sociotechnical background and its source approach were highly influential in the Netherlands among (even) medical and consultancy professionals working in safety and health agencies and among HRM staff in companies. Today the definitions of workstress and the balance model of job demands and control capacity inspired by Karasek en sociotechnology are well known and widely used. Nonetheless, it is not possible to make proper statements about the effects of the Combat Workstress Approach on the reduction and prevalence of workstress related behaviour. One can discuss if this is a serious problem, because the approach is not so much meant to establish a lower prevalence of psychosocial effects and stress reaction among individuals, but with the elimination of stress risks -and enhancing learning possibilities- in organisational and job design (question 3).

Our conclusion is that the Dutch Combat Workstress Approach is a challenging one. Although the line of reasoning of the approach is yet widely accepted, it has not been applied on a wide scale, however. In our view, this has to do with the complex relation of its stress approach and its design theory. Users have to invest time in mastering the method. Another reason is that individually oriented measures are much easier to implement with less far going consequences for the organisational structure. But we feel that this method has elements that are of interest to other countries, which are quite well transferable. The challenge of the method is that it combines possibilities to reduce stress risks and enhance an organisation's performance at the same time. This should attract both employees and employers.

13.5.2 *Discussion*

Workstress problems are widely spread and not easily solved. There seems to be a need for sound interventions at individual and organisational levels. Relatively recent management models that were a response to rigid Tayloristic and bureaucratic models, such as Lean Production and Business Process Reengineering, help to make organisations more competitive, flexible and market oriented, but do not seem to reduce stress related risks (Jackson & Mullarkey, 2000; Landsbergis, Schnall, & Cahill, 1999; Lewchuk, Stewart, & Yates, 2001; Oeij, Dhondt, & Wiezer, 2003; Oeij & Wiezer, 2002). The search for new management models and new work organisations with healthy jobs is promoted at European level. The European Commission wants organisations to embrace the 'high road' to organisational renewal leading to workplace innovation and competitiveness by continual reinvention of products and services using the European potential of knowledge, skills and experience in a 'more imaginative and effective way'. Special policies are being set up to not just create more jobs (Committee Kok,

November 2003), but also better jobs, notably jobs with a high quality of work (Totterdill, Dhondt, & Milsome, October 2002). But before we are able to evaluate what kind of management models benefit the health of work best, we must face the gaps in research on organisational interventions (NIOSH, April 2002). As our own work shows, the extent to which organisational interventions improved worker safety and health is questionable. We cannot present a convincing picture of the value of organisational interventions with the Combat Workstress Approach in the reduction of work stress. This remark is not confined to our own approach, as Parkes and Sparkes (1998) stated that many studies -particularly participatory action research interventions- tend to be difficult to interpret, causally ambiguous, inconsistent, based on small samples and / or statistically nonsignificant (cited in NIOSH, April 2002) (see also Bossche & Houtman, November 2003; Cox et al., 2000; Kompier, 2003).

To close the research gaps we need more European research on organisational interventions that may serve to protect worker safety and health. Attention should also be given to methodological problems concerning intervention research and to factors that influence the implementation of organisational interventions (cf. NIOSH, April 2002). We could seek for a closer cooperation with consultancy firms that are involved in participatory action research interventions at the forefront of what happens today in many firms, companies and agencies and exchange knowledge and experience. We could evaluate organisational interventions implemented by consultancy firms and try to establish what kind of management models are used. Maybe we should not exclusively focus on stress (employee concern) but, given the present economic climate, also take the other side of the medal of stress into account, namely productivity, efficiency and effectiveness (management concern) (Jongkind, Oeij, & Vaas, 2003, 2004 [2e]). This bridges the following objectives: the contents of organisational interventions, the process of implementation and management theories and models. Combining insights from psychology and management science, for example, could be a counter-vailing step in comments such as: “It is deplorable that the link between this area (*job stress interventions and organisation of work*) and other attempts to alter organizations is so weak. Thus, the literature on OD (*organisational development*) (...), on Productivity Measurement and Enhancement System (ProMES) (...), or on quality circles (...) conveys many messages similar to those found in accounts of organizational stress interventions” (Semmer, 2003: 343) (italics ours).

These points of discussion may contribute to the strategy and research agenda of our own participating institutes within PEROSH.

13.6 Appendix A Policy framework in the Netherlands

The Working Environment Act in the Netherlands (1989) obliges employers to carry out a policy on working conditions (or health and safety at work) in order to prevent sickness absenteeism, disability to work, and occupational diseases. Employers and employees carry both responsibility to systematically improve the organisation's working conditions. One of the activities at the organisational level was to make an inventory and evaluation of health and safety risks ('Risico-inventarisatie en risico-evaluatie'). To get professional support, organisations were obliged to cooperate with a service organisation specialised in working conditions and a variety of sociomedical services (specialised workplace health and safety agencies, 'arbodienst').

The development of stress-related complaints in the Netherlands were, however, still augmenting in the 1990s, as were, for example, the prevalence employee absenteeism, employee disability and employees with repetitive strain injuries (RSI) complaints. The approach at individual level was insufficiently effective. That was one of the reasons to install covenants on working conditions at the sector level between the government (Ministry for Social Affairs and Employment) and the social partners. Initially covenants were agreed in sectors that are 'high risk' with respect to the exposure of workers to lifting workloads, workstress, RSI, poisonous substances, and harmful noise. The covenants are an important funding pillar of the governmental policy to improve working conditions and will be discussed hereafter.

To additionally support employers and employees at the organisational level the Ministry for Social Affairs and Employment commissioned the production of catalogues with interventions and measures within the framework of the covenants. Besides catalogues on 'RSI and computer work' and on 'guiding absenteeism and work reintegration' a catalogue on measures against 'workload and workstress' was realised. The catalogue comprises all kind of interventions at the national and sector level as well as at organisational level and individual level. At the organisational level design oriented measures were formulated related to the production process, work organisation, task structure, and patterns of communication. At the individual level interventions that were proposed are, for example, cognitive restructuring, enhancing competences, training and stress management (Klein Hesselink et al., 2001). A study on effects of measures by TNO Work and Employment just started.

Covenants on Working Conditions

Covenants on working conditions are agreements between the Ministry for Employment and Social Affairs and social partners in each sector: tripartite agreements. A covenant can be defined as an undersigned written agreement, or a system of agreements, between one or more other parties or partners, at least meant to also effectuate governmental policy (Tweede Kamer der Staten-Generaal, 1995: 8). The central aim of covenants is to reduce risks for workers and costs for employers and society as a whole. Risks to be reduced are mainly related to absence due to illness, work pressure physical work load and repetitive strain injuries. Covenants contain agreements on how to combat these risks. The execution of activities agreed in covenants are supervised by a tripartite commission.

Since 1999 until the beginning of 2004 51 covenants³⁷ have been taken out of the possible about 70 sectors (Ministerie van Sociale Zaken en Werkgelegenheid, April 2004; Tweede Kamer der Staten-Generaal, 1999). All covenants feature agreements on early reintegration to the company after sick leave, reduction of work pressure, physical work load and repetitive strain injuries (RSI, musculoskeletal disorders), among a number of other subjects concerning poisonous substances, climate, quartz, allergens, and so on. The undersigned covenants apply to 46% of the Dutch working population (3.3 million workers).

Recently, the covenants have been evaluated from the viewpoint whether the desired effects were becoming visible or not (Veerman, Molenaar, Burg, & Hoffius, March 2004). Employers in sectors with a covenant were more active, because they had more often set up absence prevention policies, made risk evaluations, acknowledged work pressure and RSI risks once they were identified, and undertook measures once risks concerning work pressure, physical work load and RSI were identified. Comparing sectors with and without a covenant, the first group showed a stronger drop in absence due to illness (with 8.4%), a stronger decrease of the number of workers becoming disabled - who become recipients of disablement insurance benefits according to the Disablement Insurance Act -, a lower increase of burn out complaints, a stabilization of physical work load and to this physical load related health complaints, while in the second group there was a deterioration of workers experienced health. A general observation was that work pressure showed a reduction and RSI complaints an increase in all sectors. Although it cannot be concluded that covenants have a causal relation with these working condition improvements, we may state that it is plausible they do have positive effect on these matters. Since recently, a new survey is in use to monitor working conditions with the Netherlands Survey on working conditions 'NEA' (see Appendix B).

The estimated yearly financial savings for employers are substantial (Ministerie van Sociale Zaken en Werkgelegenheid, April 2004: 28). The Ministry for Social Affairs and the social partners have made a once-only investment of € 275 million, not taking into account the costs companies make for implementing measures. The estimated yearly savings (on costs for sickness leave and disablement insurance benefits) will be more than € 650 million. Total yield cannot be assessed yet, because a number of covenants is still in the making.

Within the framework of these covenants sectors and organisations differentiate remarkably with respect to the use and application of approaches to combat health and safety risks. An overview of all these activities is not available.

Committee Working Perspective

The policy on working conditions legislation and covenants still did not satisfactorily relief the issue of individual disablement to work. Another initiative focussed on reducing the number of people with disability and incapacity to work. A major part of the disabled individuals were suffering from psychological problems.

About 5 years ago the Committee Donner 1 (subcommittee for psychiatric work incapacity) was installed to prevent disability due to psychological reasons. The subcommittee differs from the Committee Donner 2 who was assigned with the task to reduce the volume of people with a disability scheme. Today Committee Donner 2 is named Committee Working Perspective ('Het Werkend Perspectief'). The topics, however,

³⁷ A general brochure in English about *Covenants on health and safety at work for improved working conditions in the Netherlands* (Ministry for Social Affairs, 2000) can be downloaded from http://www.arbo.nl/content/network/szw/docs/covenants_on_health.pdf.

are closely related since about one third of the new applicants for a disability scheme were diagnosed with psychological problems.

One of the latest insights to enhance recovery to work is the evidence based statement that ‘work is often the best medicine’ (see further Appendix B). “The idea that ‘it will get better on its own’ for people suffering with psychological problems is a false hope. Rest can be a good thing, but the sense that you have regained control of your life is essential. The regularity of working again (even part time) and having contact with colleagues often contributes to the recovery”, according to the guideline ‘Approach to absence for psychological reasons’ that was drawn up in 2001 by the subcommittee committee for psychiatric work incapacity (see www.werkendperspectief.nl behind the English banner). The same notion is the basis of the ‘Prevention Guideline against psychological work incapacity’ (Preventie Leidraad psychische arbeidsongeschiktheid) that we discuss in Section 3 as an element of organisational interventions. In a recent speech at the International Forum on Disability Management on 14 September 2004 in Maastricht, Mr. A.J. de Geus, Minister for Social Affairs and Employment stated that “There has also been a substantial fall in the number of people becoming incapacitated for work. The chance of becoming incapacitated for work has fallen to below the national average in both primary and secondary education. Clearly, therefore, working to improve health and safety at work pays dividends.”

Today’s policy context

The policy on working conditions had a strong focus on changing the work organisation from a design approach at the end of the 1980s. Policy makers and experts agreed that a ‘source approach’ would be the best option. This source approach or conditional approach aims at the prevention of risks and the reduction of existing risks (Pot et al., April 1990: 4-5). In the 1990s the policy attention shifted slowly from the conditional, source approach to the side of the effects, like absenteeism, disability reduction and work reintegration. Or from ‘busy!, busy!, busy!’ (workstress) to ‘jobs!, jobs!, jobs!’ (employment) (Committee Kok, November 2003). First, this implied a shift from the organisation to the individual worker concerning the question of guilt about stress causes. Second, it was related to a shift from workstress issues to labour productivity issues, illustrating the tipping of the scale in favour of the interest of management. Of course this cannot be seen loose from economic circumstances of that time. Third, there seemed to be more pressure on people to get (back) to work when we take into account the huge effort on reducing applicants for work disability schemes and on re-integrating sick workers into the work process.

Two phenomena appear in the 2000s. On the one hand primary prevention is maybe no longer dominant, but seems to get evened by secondary and tertiary prevention. Financial incentives for employers and employees for quick recovery play a role here, encouraged by specialised workplace health and safety agencies, insurance companies and employment reintegration businesses who all have financial interests in these matters – i.e. minimising or maximising the high financial risks of sickness and disability dependent on the service they provide. On the other hand, workstress related problems are not restricted to the working environment. Work is invading the home sphere as a consequence of ICT use and flexible working schedules that permit transitory life spheres. And so is stress. And so is stress from the home sphere invading the work context vice versa. This has led to new policy roads with regard to ‘life course’ issues (see further Appendix B).

13.7 Appendix B Approaches to combat psychosocial risk factors

This Appendix presents the most relevant approaches to study and combat psychosocial stress risk factors in the Netherlands from quadrants 1, 2 and 4 in Figure 2, as well as approaches that overlap more than one quadrant. It must be said that this presentation is incomplete and selective. A complete overview covering all Dutch activities in this field does not exist (for an overview on quality of work research until the mid nineties see Oeij, Fruytier, & Broek, 1998; for additional stress approaches see e.g. Schaufeli & Kompier, September 2002). We have tried to gather approaches from the perspective of their relevance for readers from other countries. Some of these approaches have been very influential in the Netherlands, whereas others are important new developments.

We begin with approaches that do not fit in any quadrant but overlap one of more quadrants and then proceed with approaches in quadrants 1, 2 and 4.

Not related to a particular quadrant

Monitoring research

A rising trend in recent years is the use of monitoring systems on the prevalence of occupational safety and health related risks among the working population. These monitoring systems are in most cases repeating surveys and panel studies. Among the risks monitored we are mentioning inconvenient physical working conditions, accidents, and (other) characteristics of the work environment (such as time constraints, work intensification, demand-control balance, employment relations, organisational behaviour). Effects reported are, for example, the prevalence of work stress, emotional exhaustion, burnout, fatigue, musculoskeletal disorders, repetitive strain injuries and absenteeism.

The most relevant monitoring systems in the Netherlands are ‘Permanent Onderzoek naar de Leef Situatie’ (POLS) (Ongoing research on the daily life situation) by the Central Bureau of Statistics, ‘Nationale Enquête Arbeidsomstandigheden’ (NEA) (Netherlands survey on working conditions) by the Ministry for Social Affairs and Employment and the ‘TNO Arbeidssituatie Survey’ (TAS) (TNO Working environment survey) by TNO Work & Employment. Much of this research is built on the ‘Monitor Stress en Lichamelijke Belasting’ (MSLB) (Monitor Stress and Physical load) which was developed to study psychosocial risk factors and its combat at different organisational levels, namely among employers, employees and works councils (Houtman, 1999).

The same trendy developments seem to be taking place at the European level. We mention in this respect the European Survey on Working Conditions by the European Foundation for the Improvement of Living and Working Conditions (Dublin) and the development of a methodology for OSH monitoring by the European Agency for Safety and Health at Work.

Life course developments

A relatively new phenomenon is attention for psychosocial complaints related to the non work domain. The Netherlands welcomed a huge raise of the labour participation of women in the last decades and a growth in teleworking due to ICT technology. Both developments have repercussions on the work life balance of individuals. The barrier between working life and the private life erodes. Especially the cohort between 25 and 45 years, with multiple task loads with respect to their jobs, their children and the care of their parents, are confronted with what is now being called the ‘rush hour of life’.

Enhancing everyday stress the ongoing trends in individualisation and the 'retreating' government are leaving more issues to decide upon at individual levels, such as arrangements and insurances in the realm of social security, education, health, and employment relations, creating 'overchoiced generations' to postpone making compromising choices (Littwin, 1986). A start has been made in recent years to formulate new policies about 'life course arrangements', from the perspective that the lives of today's citizens have completely different life courses when compared to the lives of earlier generations. Similar life events, like raising a family or going to university, no longer take place at the same moments within generations, and imply a differentiation of life phases. While individuals must cope with a larger range of choices - as possible stressors - and policy makers seek to fit new realities with new policies, social observers, commentators and scientists are expressing the need to gather information to monitor these new issues. One of the new research initiatives in this field is the 'OSA Toekomst van de Arbeid Survey' (OSA TAS) ('OSA Future of Work Survey') (Ester, Vinken, & Dun, forthcoming). Another relevant project is the 'Tijdbestedings-onderzoek' ('SCP Time Use Survey') in which several thousand respondents fill in a diary during one week providing insight in the way how the Dutch plan and spend their time on issues as work, education, care, travel, sleep and meals (Breedveld & Broek, 2003, 2004).

Mental fatigue at work

One national project that has activities to fit in all four quadrants is the research programme 'Psychological fatigue at work' (Psychische Vermoeidheid in de Arbeids-situatie) (Meijman & Schaufeli, 1996). Although this programme does not fit in Figure 1, it is large and important enough to spend some words on separately.

Occupational fatigue, job stress and related psychological problems and disorders like burnout were regarded as major social problems in the Netherlands in the 1990s. About one-third of all work related mental disability claims were stress related in the Netherlands, when the programme set off in 1995. A large-scale 6-year concerted research action on occupational fatigue was initiated under the heading of the Dutch Organisation for Scientific Research (NWO) which integrates psychological and medical perspectives and included four lines of research: (1) experimental research in work psychology; (2) clinical and organizational field research; (3) epidemiological research; and (4) occupational health research. Subjects covered were acute psychological occupational fatigue, long term psychological occupational fatigue, health related aspects of long term psychological occupational fatigue, and psychological fatigue related to chronic diseases and work. In total about forty (doctoral and post-doctoral) research projects were carried out. Many universities, research institutes, occupational health services, companies and unions contributed to the programme in a combined effort to increase scientific knowledge with respect to the prevalence, antecedents and consequences of occupational fatigue. Additionally, knowledge was created in the fields of assessment, prevention and treatment in order to develop evidence-based diagnostic, preventive and therapeutic tools for practice. The project was expanded with a few years but ended in 2004 (for an overview see Evenblij, 2004).

Related to quadrant 1: ‘organisational interventions’

Developments in theory and models

Ever since the growing popularity of Karasek’s Demand-Control-Support model (Karasek, 1979, 1997; Karasek & Theorell, 1990, January-March 2000) in the 1980s an overwhelming abundance of research has been carried out to test its hypotheses, to expand the model and to develop new models and theories in the Netherlands. Other models frequently used in Dutch research are Warr’s Vitamin-model (Warr, 1987) and Siegrist’s Effort-Reward Imbalance model (Siegrist, 1996; Siegrist & Peter, January-March 2000). Models less frequently used are originating from the rich variety of (other) approaches in the realm of task characteristics, action theory based task analysis and cognitive task analysis (Ouwerkerk, Meijman, & Mulder, 1994). Two recently developed models gaining importance in the Netherlands are the Job Demands-Resources Model (Bakker, Schaufeli, & Demerouti, 1999) and the Demand-Induced Strain Compensation (DISC) Model (Jonge & Dormann, 2003), which are building on the work of Karasek and Siegrist. These theories and models study psychosocial work characteristics as determinants for the health and well-being of workers (Jonge, Blanc, & Schaufeli, 2003; Schnall, Belkic, Landsbergis, & Baker, January-March 2000).

Related to quadrant 2: ‘individual explanations’

Individual and behavioural characteristics

Whereas research in Quadrant 1 contains theories and models to study psychosocial work characteristics as determinants for the health and well-being of workers, studies in this quadrant deal with individual characteristics, although this distinction is not always very strict. Examples of objects under study are coping style, personality traits, behavioural characteristics (such as motivation, attitudes, intentions), and psycho physiological characteristics (cognitive processing, mental effort, biophysiological effort e.g. with respect to heart rate, blood pressure, hormonal excretion). While quadrant 1 has a focus on characteristics of the work environment, and this quadrant looks at the subjectively experienced stress and the psychological and physiological reactions to stress situations, there is also research that combines work environment models with measuring individual reactions as effects. Examples of these, sometimes overlapping with quadrant 1, are research related to Lazarus’ transactional approach (inter individual and intra individual transactions between person and work), to the Michigan P-E fit approach (interaction approach), to the Stimulus approach (taxonomy of work stressors) and to the Response approach (individual reactions to stress situations). This field is too broad to describe in detail and is covered by many different biomedical and social scientific disciplines.

Related to quadrant 4: ‘individual interventions’

Stress management and therapies

Disability to work as a consequence of mental incapacity has been a major problem over the last 15 years in the Netherlands. Since many years the Netherlands are ranking among the top countries in Europe having the largest share of workers with complaints on mental workload. The government installed the Committee Working Perspective with the assignment to stimulate the social reintegration and the reintegration to work of persons with a handicap, a chronic disease and / or a mental or psychiatric illness and to contribute to reducing sick leave and the use of the disability scheme. The sub

Committee Mental Disability to Work has the task to implement the Guideline Absenteeism due to Mental Illness or Psychological Disorders, which is a step-by-step plan aiming at reintegration to work and recovery of workers in case of absenteeism. This plan should be used through the cooperation of employer and employee under the guidance of institutions responsible for the execution of related social security acts (like the disability scheme). The guideline is an approach oriented at the individual level (for a first evaluation see Heuvel, Amstel, Jettinghoff, Ybema, & Bossche, April 2004). This guideline is not the same as the Prevention Guideline discussed in Section 3.

One of its central recommendations of these committees is that return to work should not be postponed too long, for that makes it more difficult for individuals to return to the workplace. This insight is confirmed by empirical research on individual stress interventions, to which we shall now turn.

Stress interventions at the individual level are widely spread, not necessarily relating to work stress. Sound evaluation research is rare (Bossche & Houtman, November 2003), but at least two studies are worth mentioning. One is a meta-analysis on the effectiveness of occupational stress-reducing interventions by Van der Klink et al. (2001). Effectiveness was determined of four intervention types: cognitive behavioural approaches, relaxation techniques, multi-modal interventions and organization-focused interventions. In this meta-analysis cognitive behavioural interventions proved to be more effective than relaxation techniques, multi-modal programs and organization focused programs. Cognitive behavioural interventions especially helped to improve perceived quality of work life and psychological responses and resources. They also significantly reduced anxiety symptoms. It is suggested that employees with high job control profit more from being provided with individual coping skills than employees working in more constrained environments, because this high job control allows them to exercise these coping skills. The meta-analysis suggests that cognitive behavioural therapy is one of the most effective intervention types (Bossche & Houtman, November 2003; Klink, Blonk, Schene, & Dijk, 2001).

That a quick work rehabilitation is crucial for recovery is suggested by a recent study among self-employed workers (Blonk & Lagerveld, 2003). In a randomly controlled trial among 163 self-employed persons with minor psychiatric disorder - namely incapacity for work due to psychological complaints related to depression, anxiety, stress, and burnout - one group received psychological counselling focused on both work and the individual (combined approach) by a job-analyst/labour-expert, while another group received cognitive behavioural treatment by a psychologist (cognitive restructuring, time management). A third group functioned as the control group. A significant reduction in the level of incapacity and psychological complaints for all conditions was observed after four months. However, the combined approach was significantly more effective in reducing incapacity for work, while there were no significant changes between all conditions on psychological complaints. After 10 months a further reduction of level of incapacity was observed in the first group receiving the combined approach. The established differences between the conditions remained the same and there was no further reduction of psychological complaints. Interestingly, the research suggests that even individuals with an intervention of cognitive therapy are not better off than those without an intervention, if we consider the effects on those who were provided with real work related options to temporarily reduce the work load. Work itself is beneficial to someone's health (Blonk & Lagerveld, 2003; Bossche & Houtman, November 2003).

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14 HSL (United Kingdom)

‘Management Standards’ and work-related stress in the UK: Policy and practice

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Abstract

Research carried out by the Health & Safety Executive and Health & Safety Laboratory UK presents an overview on policymaking and science and practical developments concerning management standards and work related stress. This research was published in the journal of *Work & Stress* in 2004 and the full articles can be found there (Cousins et al, 2004; Mackay et al, 2004). A summary of that research is given in this contribution.

14.1 Policy background and science

In the late 1990s, the Health and Safety Commission, as the lead authority in the UK responsible for Health and Safety at Work, conducted an extensive consultation exercise to elicit views about how work-related stress should be tackled. The Commission subsequently decided that regulation was not justified and opted for an approach with four strands. One of these was to work with stakeholders to develop clear, agreed standards of good management practice. The research (Mackay et al, 2004) describes and discusses the rationale behind a standards-based approach that is essentially based on a method of controlling hazards. The Management Standards approach uses a taxonomy of six stressors that has evolved out of extensive research carried out on behalf of the UK’s Health and Safety Executive (HSE) and in conjunction with stakeholders, and a three-phase risk assessment methodology. Further developmental work on the standards (which are to be subjected to public consultation) and associated measurement tools is described in a companion paper in *Work & Stress* (Cousins, Mackay, Clarke, Kelly, Kelly, & McCaig, 2004). The emphasis is on prevention towards reducing stress in the UK working population. We review current thinking on models of work stress, consider evidence linking workplace psychosocial factors and various health and organizational outcomes, and examine the effectiveness of organizational interventions. We argue that the literature supports an approach that aims to move organizational states (represented by the current situation) to more desirable ones (represented by the six Management Standards), and that this is an effective ‘population’ based approach to tackling workplace stress and promoting individual and organizational health.

14.2 Practical development

Research commissioned for the UK’s Health & Safety Executive (HSE) supports the view that a preventative, risk-assessment based approach would be more effective than case-based methods in achieving a nationwide reduction in work-related stress. The background to this approach is described and discussed in a companion paper in *Work & Stress* (Mackay, Cousins, Kelly, Lee, & McCaig, 2004). The present research describes the development of HSE’s new stress Management Standards which offer organizations continuous improvement through a three-phase stress preventative process and the development of a supporting ‘Indicator Tool’ (a two-phase questionnaire to as-

sess employee perceptions of working conditions). The Management Standards comprise a series of 'states to be achieved', which are statements of good practice in six key stressor areas: demands, control, support, relationships, role and organizational change. For each stressor area there is also a 'platform statement' that outlines the main aims to be achieved by the organization. This statement may include a target percentage of employees finding that the organization meets the standard: this matter will be settled after the standards have been assessed in a public consultation campaign. To use the new process, an organization's state can first be assessed using the Indicator Tool; liaising with workers in focus groups enables a further exploration of issues raised; finally, there may be formulation of interventions and subsequent review. It is not intended that the standards will be legally enforceable. HSE/HSL's aim is that they and the associated methodology will enable organizations to effectively tackle work-related stress, and subsequently reduce both its incidence and prevalence.

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Appendix A Evaluation criteria

Effectiveness

- The approach has positive, preferably evidence-based effects at the level of indicators for psychosocial factors and/or its social outcomes;
- It is clear which are the questions to be answered;
- The evidence comes basically from showing that the approach has successfully achieved its aims or, in other words, shown to be capable of producing the targeted outcomes. The interventions should have measurable aims with clearly defined targets and target groups. This may also be in terms of qualitative information;
- Sometimes the positive experience (subjective satisfaction) of the participants and / or stakeholders (employers, workers, employer organisations, unions, politicians, policymakers, scientists, consultants) with the approach may be an essential additional criterion of effectiveness;
- The impact may differ with respect to the participants (for example if activities are directed by governmental bodies, social partners or (health) insurance companies the activities, goals and effects may be different);
- Another indication of effectiveness is that the approach has the potential to reach a large proportion of the target population with low or moderate costs (cost-effectiveness);
- A related indicator of effectiveness which represents the reverse side of reducing psychosocial risks and effects, is the positive effect on economic indicators for organisations, like more productivity, lower social security costs, improved economic performance.

Approach characteristics

- The approach has clearly defined short-term as well as long-term goals;
- It is of sufficient duration and intensity to realise the targeted changes in psychosocial factors and the organisational conditions to improve the present situation;
- It has a multi-component character (multi-factor, multi-method, multi-moment, multi-system oriented and multidisciplinary).

Approach development

- The approach is based upon sound scientific knowledge;
- The assumptions of the approach are clear;
- It is built on explicit and easy to understand theoretical models;
- It has been designed by a multi-professional team, ideally including end-users.

Feasibility for replication

- The approach is potentially transferable to other countries and communities while it remains flexible and adaptable to local conditions (facilitating the feeling of ownership and/or commitment);
- The approach has obvious lessons learnt for other countries;
- It is practical, of low complexity, manageable within local resources and reasonable as regards manpower and financial costs.

Appendix B Members of PEROSH

AMI, Arbejdsmiljøinstituttet, National Institute of Occupational Health, Copenhagen, Denmark

NIWL, Arbetslivsinstitutet, The National Institute for Working Life, Stockholm, Sweden

BIA, Berufsgenossenschaftliches Institut für Arbeitsschutz, BG-Institute for Occupational Safety and Health, Sankt Augustin, Germany

BAuA, Bundesanstalt für Arbeitsschutz und Arbeitsmedizin, Federal Institute for Occupational Safety and Health, Berlin, Dortmund, Germany

CIOP, Centralny Instytut Ochrony Pracy, Państwowy Instytut Badawczy, Central Institute for Labour Protection, National Research Institute, Warszawa, Poland

HSL, Health & Safety Laboratory, Sheffield, United Kingdom

INRS, Institut National de Recherche et de Sécurité, National research and safety institute for the prevention of occupational accidents and diseases, Nancy, France

INSHT, Instituto Nacional de Seguridad e Higiene en el Trabajo, National Institute of Safety and Hygiene at Work, Barcelona, Spain

ISPESL, Istituto Superiore per la Prevenzione e la Sicurezza del Lavoro, National Institute for Occupational Safety and Prevention, Roma, Italy

Munkavédelmi Kutatási Közalapítvány, Public Foundation for Research on Occupational Safety, Hungary *

Prevent, Brussels, Belgium

STAMI, Statens arbeidsmiljøinstitutt, National Institute of Occupational Health, Norway *

FIOH, Työterveyslaitos, Finnish Institute of Occupational Health, Helsinki, Finland

TNO Arbeid, TNO Work and Employment, Hoofddorp, The Netherlands

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* no paper available.

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