

Research and Development of Work-Related Psychosocial Factors and Health

Analytical Survey in Finland

Report for NEW OSH ERA Programme

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Finnish Work Environment Fund

Helsinki 2009

Foreword

This survey was made as a contribution of Finnish Work Environment Fund (FWEF) to the European NEW OSH ERA programme, coordinated by the European Institute of Occupational Health in Bilbao. Psychosocial factors and health at work is one of the two main topical areas of the programme, in which twelve European agencies participate as partners. The partners represent organisations of research policy and finance. They plan to define research topics to announce a call for project proposals later in 2009. For the definition of the topics of the call, the partners invited experts for a consultative meeting in Athens in January 2009. FWEF saw that background information on the state of the art of the field in the participating countries would be useful in defining research priorities. FWEF invited the undersigned to make a survey and analysis of the situation in Finland to be presented as a pilot case for the European consortium. Apart from serving European collaborative purpose with this survey report, FWEF considers it useful in its own national planning and decision making.

Senior experts in Finland were interviewed for obtaining the information. The interviewed experts were motivated in contributing to the survey and have also expressed interest in using the report in their own work. Best thanks are due to them for their valuable contribution.

1 March 2009

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Table 1. Main topical areas, theoretical background, approaches, and examples of practical products of the working groups/teams

Research and Development of Work-Related Psychosocial Factors and Health

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1. Background and objective

European collaboration has shown that the field of research and development on work-related psychosocial factors and well-being is diverse and heterogeneous. The experts have different approaches, specialization, resources and networks. There is no general overview of the situation. This may mean that ad hoc needs for collaboration in specific projects may not always lead into the building of ideal networks and focal points. On the other hand, the present situation may complicate communication within the existing networks. The financial bodies have difficulty in evaluating collaborative projects both on the content level and the strategic level. Planning of research and development programmes, decision making on project grants, and cooperation might profit from an orienting map of the situation in the countries.

The aim of this survey was to make an overview of the contents, orientations and actors in the field of research and development of work-related psychosocial factors and well-being in Finland. Another aim was to gain expert opinions on the present situation of the field overall as well as visions on research challenges and suggestions for future research work in Finland and in Europe at large.

2. National background for research and development in psychosocial area

Research on psychosocial factors at work started to expand in the mid 1970's in Finland. Finnish Institute of Occupational Health (FIOH) was the main actor from the beginning, followed later by other research institutes and universities.

National strategies have given a good basis for continuous progress in this field. Governmental programmes have included policies and defined obligations for the development of psychosocial conditions of work. Finland has invested more than many other countries in the implementation of country-wide programmes in this field. These include e.g. National Programme on Aging Workers (1998-2002), Well-Being at Work Programme (2000-2003) and sc. VETO Programme (2003-2007). The latter has been followed by sc. Well Being at Work Forum, where the social partners are included with the experts.

The ministry of Social Affairs and Health has invested in the development of psychosocial aspects of labour protection in collaboration with the social partners. The revisions of the legislation to cover psychosocial issues have given basis for the progress of the actions in the field. Occupational Health Act and Labour Protection Act, revised in this millennium, cover psychosocial factors. Labour protection strategies, built on that basis, bring the ideas closer to the practice.

Finnish labour protection authorities follow international development, e.g. agreements and recommendations by EU and ILO, and participate in Nordic programmes. European labour protection strategies are implemented. Social partners apply in their own practice the agreements made jointly by European partners. Recently for e.g. prevention of harassment and violence at work.

The financial support for research has also been adequate. Governmental funding covers the main part of the research work of FIOH, although the proportion of the public funding has been in the decrease during the past decade. Finnish Work Environment Fund (FWEF) is the main additional funding agent, which financed 447 projects in 2008 with 21 million Euros. Finnish Academy of Science has increased its contribution. Other funds, universities and institutes invest their share in the field.

It can be concluded that the conditions for research and development related to psychosocial factors and health at work have been relatively favourable in Finland. As a result, repeated work life surveys, cohort studies, nation-wide data banks and registries, and standardised methods for the assessment of work, stress and health have been accumulated. This gives a strong background for further research, including interventions, and for the development of models, methods and tools for the use in the organisations. Such activity is getting an important role in conjunction with the research work.

3. Collection of information

A semi structured interview (see topics in Appendix 1) of the leaders (15 persons) of the main research units or groups in Finland was carried out (see list in Appendix 2) during December 2008 and February 2009. The choice of the respondents was based on the effort to find senior experts to represent the multifaceted field of expertise and research in the area. Persons were added for the interview if someone referred to somebody as a leading collaborator or independent specialist, not yet included. It has to be emphasized that the survey covers only experts who have carried out research in the field in leading roles for a long period of time with established achievements. It is obvious that a richer picture could have been gained if individual researchers and newly built groups would have been included. The interviews were made in most cases face to face, in three cases by phone and two in writing.

4. Findings

4.1. Priority areas of research

The respondents characterised a multitude of priority areas in their present and near future research in their organisations/units. They were first classified in topical groups according to their content and focus. Altogether 12 groups were formed. The great majority of priorities included support for development and interventions in organisations based on and evaluated by research. The groups of the topical areas are presented below and the specific topics mentioned by the experts are given in the groups in random order with no indication of priority or emphasis.

- A. Development of organisations and work : study and support of the change processes
 - Development of methods for balanced development of organisations
 - Organisations under comprehensive change: support in conditions of change of the whole logic of function; e.g. municipalities and their services
 - Consequences of development actions in organisations
 - Dynamics of change processes in organisations

Better management of changes and increased flexibility

- support of structural changes of municipalities and their services (e.g. health care)
Community 10 project

Changes over time of the development strategies in organisations

Co-operation of different parties at work: leaders, personnel, OSH etc.

Innovativeness, change capability and well-being in organisations

Leadership for promotion of innovation, competence and productivity

- development of human resource practices for transfer of competence between generations
- innovative action, factors contributing to it, overall functioning of innovative organisations
- history of development of leadership theories
- information processes in situations of organisational crisis

Management of risks for safety

B. Organizational culture

Organisational cultures to support diversity

Equality of genders, different age groups, handicapped

Towards multicultural organisations

Prevention of mobbing and harassment

Harassment, mobbing and safety in EU (collaborative survey)

C. New ways of working

Multilocational, mobile, distributed work

Virtual work environments

Reward systems in new working contexts

Paradigmatic development

D. Working hours and sleep disorders

Role of working hours in the etiology of diseases, e.g. CHD

Working hours that promote safety and health

Role of working hours in cognitive functions and sleep disorders

E. Working life and its connections with other life spheres

Work and family interrelationship

Precarious work and its reflections to family and well-being

Return to work from long sickness absence

F. Positive health: concepts, indicators and methods of assessment and promotion

Positive indicators of well-being, comprehensive view

Personal resources of well-being

Positive organisational behaviour (POB)

Work engagement

Resources for well-being at work

Interconnections of well-being and productivity

G. Work-related stress and burnout

Psychological and physiological aspects of stress; experimental research
 Interrelations of stress and sleep disorders
 The role of work in sleep disorders
 Sleep disorders, cognitive functions and health
 Prevention of burnout
 Workaholism, development of concept and assessment
 Recovery from stress and burnout

H. Work-related ill health and etiology of diseases

Depression, psychosis, CHD, disorders of cognition (dementia): how work affects the development and prognosis of disease
 Study of factors which support or hinder the coping of mentally ill in working life
 Methods for work organisations for recognition and assessment of mental problems
 Model for treatment of depressive employees by OSH
 Methods for dealing with mental health related sickness absence
 Sickness absences, causes, consequences, prevention, return to work

I. Working ability and vocational rehabilitation

Working ability and functional capacity of mentally ill (depression, psychosis)
 Working ability and quality of life
 Cognitive functions, factors that decrease functional capacity
 Development of working ability
 Aging and working ability
 Prevention of social exclusion
 Rehabilitation of persons with lowered working ability

J. Life-course development of individuals

Personality and its development during life course, including work
 Connections of work and personality development
 Personality, life course and occupational well being, from youth to retirement
 Transitions in life: to work, back to work, to retirement
 Transitions in life: to work, back to work from unemployment, to parenthood, to retirement
 Assisting career-related transitions of life

K. Interconnection of well being and economic productivity

L. Application of research information in policy making

4.2. Theoretical and conceptual trends

Given the broad area of research and development described above, the theoretical backgrounds and concepts are diverse and have been in the process of change during the almost 40 years of continuing and expanding research activity.

Some of the interviewed experts started in the field already in the 1970s, during the early phases of the psychosocial approach in studies of work and well-being. One of the early trends was oriented towards the identification and assessment of factors of work load and their impacts on the worker based on e.g. Hacker's framework. Another trend came from USA, and led into the adoption of job stress model developed by Caplan and Cobb. Levi's stress model was published in Sweden and it became soon in common use in Finland as well. As an effort to identify the core dimensions of health-relevant job factors the job strain model developed by Karasek was adopted in a broad use.

Accumulating information based on research along these models eventually created a natural interest and demand to use this information for improving the situation at work and for having impact in general. The models of work load and stress, which were apt for identification of problems, did not give a sufficient basis for improvements as such. New types of approaches were needed. Two main paths developed: one for improving the resources and practices of the work organisations and the other for the improvement of the resources and functions of the individuals. Recognition of the resources in both was the first step.

The most broadly applied framework for the understanding of individual resources was the theory of coping with stress by Lazarus from the late 1970s on. Research aiming at recognition and development of individual resources was mostly based on this model until the adoption of the salutogenic theory of well-being by Antonovsky with sense of coherence (SOC) as the key concept. Both Lazarus' model and Antonovsky's model are continuously applied. The theoretical basis has, however, been broadened and other more dynamic models have been adopted to be used along with the previous models. This is linked with the expansion of the interest in the life-long development of the individuals and with a readiness to carry out interventions for improvement of the resources. Theories of motivation, learning, planned action and conservation of energy etc. pinpointing the continuous process of development between and over different life transitions, are applied (see Table 1). Learned resourcefulness and preparedness of the individuals belong also to the key concepts here.

Recourse-orientation is adopted also in the study of the whole labour force as a framework to understand the role of human factors in productivity. The central concepts of interest here are e.g. intangible resources and intellectual capital. The hypothesis is that these resources are linked with productivity indirectly via well-being. There is need for further theoretical work to explain and understand the linkages and processes between the labour force resources and productivity.

One of the first responses to the increased demands of making impact at work places was the development of the model of the developmental work research by Engeström. Although it had quite a number of users in the 1980's and 90's, it did not become the main stream model. The application of the model has decreased but it is still in use by some experts, perhaps in a less specific form and in combination with other theoretical approaches, such as learning theory.

Apart from the above developmental work research model, the resource- and development oriented approach in the organisational research has been theoretically more eclectic, often combining aspects of different theories. The shift of attention from the assessment and development of separate features to comprehensive understanding of the organisations and their functions has been the trend. This has been linked with the adoption of the system theoretical models pinpointing the functional linkages of different parts of the organisation with each others. Frameworks that involve goal oriented action are being adopted as a further step towards organisational development. Theories on motivation, learning, participation, dialog, and leadership are applied. Attention is continuously paid also to the development of the work

processes as a part of overall organisational development. Theories of activity, action regulation and socio-technical systems are applied, especially when psychosocial approach is linked with technological research and development of technological work processes.

Interest in the work-related psychosocial aspects of diseases has emerged from two directions. First, already the early stress models indicated that health disorders are a possible outcome of long-term stress at work. Burnout was studied extensively as a further step of untreated chronic stress and again burnout theory stated that if long-term, burnout increases the probability of diseases. The other approach was based on the recognition of the high prevalence of certain mental and physical diseases and related decrease of work ability in the working population and on the interest of finding out the possible role played by psychosocial factors in their etiology. The etiology of physical and mental diseases, e.g. cardiovascular diseases and depression is studied within the epidemiological framework including psychosocial factors at work. Stress and burnout theories are often combined to the epidemiological models to explain the process of the development of the diseases. Disease-specific multi-disciplinary models with advanced biological components are also adopted. The recent advancement of stress research into more specific experimental study applying the psycho-physiological stress models contributes to the understanding of the etiology of diseases.

While one trend of psychosocial health research proceeds into deeper and more disease-specific etiological direction, another trend advances in the prevention and interventions. Models based on various behavioural theories are developed for e.g. the prevention and treatment of burnout and depression within OSH, return to work from long sick leave, and maintenance of work ability of the handicapped. Characteristic to the models developed here is the multidimensional integration of the health point-of-view with work conditions. Steps are also taken towards the recognition and practical promotion of positive health on the basis of the work engagement model.

Apart of the described main trends of theoretical orientations, special models are applied in more specific problem areas. The most urgent need for theory construction was seen concerning the new trends in work life as a part of fundamental social changes. These would include the consequences of the climate change in work life, the application of the advancing virtual technology, and new phenomena related to the globalization.

4.3. Methodological trends

A strong characteristic of the research approaches in the field is an extensive involvement in various kinds of development, intervention and support actions. The emphasis is in the action directed to the development of organisations, including leadership, management of change, restructuring, increasing diversity, etc. There is also a well established individual orientation including systematic development of models and techniques for increasing individual competence and skills to overcome e.g. career-related transitions in life and for recovery from stress and related disorders.

Research is increasingly multi-disciplinary involving behavioural sciences, medicine, technology, social sciences, economics, ergonomics, etc.

Long-term research is in favour. It involves often repeated cycles of study, development and evaluation. Another common type of longitudinal research, especially in health studies, is repeated follow-ups of certain cohorts, samples of total labour force or employees of certain organisations.

A common aim is to create firmer and broader consortiums on a long-term collaborative basis.

To summarize the main trends in research approaches, a clear shift of emphasis is seen

- from identification of problems to prevention
- from risks to promotion of the positive
- to development of models and tools for use in organisations
- to promotion of research results in practice

4.4. Outputs and products of research and development

Scientific publication in its various forms is naturally the main type of output of the research process. Apart from that, production of action models is common. A step further is the increasing production of tools for the facilitation of the application of the models in practice, such as guidebooks, guide leaflets "act sheets", and training programmes. Various kinds of assessment methods and other tools for the use by OSH professionals and others in the organisations, and for the general public, are commonly produced. Examples of such products are the standardised Nordic questionnaire on work conditions and two standardised measures with handbooks for the assessment of burnout, act sheets on prevention of bullying and harassment, models for the development of leadership and innovative action in organisation, several group methods with guidebooks for individual resource building in situations of life transitions, internet application of data storage, web tools including survey methods, check lists, etc. (see Table 1).

4.5. Collaboration and networking

Collaboration between experts and institutions is common place and an integral part of research work. The different units of FIOH collaborate with each others in a multidisciplinary context. Other networks involve experts and units of FIOH, the universities of Helsinki, Jyväskylä, Tampere and Turku, National Institute for Health and Welfare, National Institute for Technology, Statistics Finland, and UKK Institute, and the Universities of Technology in Helsinki, Lappeenranta, Tampere and Turku. Social partners in certain areas, e.g. in trade and services sector are also important agents of long-term collaboration. Established networks with long-term agreements have been created in certain areas, e.g. Sleep and Health consortium, while in the majority of cases collaboration is created project by project. Research on large joint cohorts has given basis for networking in many cases. It is seen that although the networks are mostly loose they become increasingly essential because of e.g. financial channels, reorganisation of the sector institutes and as a result of the overall changes of the working life. Knowledge in one discipline is not enough in order to understand the changes of work life and its development. In certain areas FIOH is more or less the only active agent, e.g. in research on bullying and harassment at work, and working hours and related working time schemes.

Overall, institutes involved in the research on health, diseases, work ability and rehabilitation collaborate with each others. However, collaboration with rehabilitation and OSH is seen insufficient and opinions are

expressed that it should be increased. Collaboration takes place also between Rehabilitation Foundation and Social Insurance Institution (KELA).

International collaboration has also become an essential part of research in almost all areas. Most teams collaborate with many leading European universities and research institutes and, to a minor extent, collaboration takes place in Japan and USA as well. Connections have been facilitated by the role of FIOH and National Institute for Health and Welfare as WHO collaborating centres. A long-term and relatively tight network on stress and assessment of psychosocial factors has been active among the Nordic countries since 1980s. Nordic collaboration is said to have special additive value because of the similarities between the countries. EU networks have been established in research on work life and psychosocial factors, e.g. on the basis of the Topic Centre projects. These projects were first usually bilateral, but they have become broader and include several European countries. Joint European projects are created among various groups from different countries.

ESR projects are an important basis for international collaboration for some teams, where development of structures and practices at work places or in the services systems is essential, e.g. Rehabilitation Foundation.

Contacts of individual researchers based on similar interests are in most cases the basis of networking both in Finland and on the international level. This is supported sometimes by formal collaboration agreements made between institutes. Financial issues are secondary but often important additional motives for collaboration. It seems that leading experts are in the position of creating collaboration in a way and to the extent they wish for, and they are, therefore, almost without exception satisfied with the present situation. If collaboration would be increased, increased financial and scientific resources would be needed to carry out the communication and other additional work. Some would welcome this, e.g. the group in Tampere while for some the enlargement of the team would mean unwanted consequences, such as increasing administrative work. According to the experiences of the interviewed experts the attractiveness of the collaboration in the EU projects is not optimal because of the heavy bureaucracy in following the rules for creating a consortium and in the implementation of the projects until the final reporting.

4.6. Critical views and suggestions by the experts

The experts were asked to make comments and suggestions regarding the conditions for carrying out research in the area, on needs of research and making impact in Finland and on the European level, and on policies of financing of research. The comments were grouped according to their content. They are given below without indication of importance by their order.

A. On financing and research policy

Several experts pointed out that those projects that aim at quick applications are often favoured by financial bodies on the cost of the quality. This leads into production of recommendations, guidelines and tools prematurely. Their theoretical ground may not only be vague but even incorrect, thought the experts.

Some of the participants thought that collaborative studies are rightly in favour, but collaboration should not be regarded as a value in itself, since it is of value only if it is productive.

Several experts pointed out that projects that involve both research and development, perhaps in many organisations, often have to search for financial support from several sources. A general opinion was that financial bodies should see the linkage of both parts and not limit their support mechanically to either one only.

The current trend of favouring always something new was strongly criticized, because it may not only be costly but to slower down the accumulation of information. Because of the trendy value of the new, the financial bodies and the organisations prioritize short projects. As a consequence, great amounts of previous research material remain underutilized and development projects are ended prematurely. To avoid this, the use of available previous data and longer term research should be encouraged and supported. This would save costs and accumulate information according to the experts.

B. On focus of research and actions

Working life is facing a change of the role of the leadership in organisations according to the interviewed experts. One of the new ways of looking at leadership is its servant function, sc. servant leadership, which should be studied and evaluated from the point of view of well being and productivity.

Shift of the focus from the negative to the positive was emphasized. Interventions at work places were considered still too much problem-oriented aiming at correction of negative situations. Resource-oriented research-assisted development was seen important more broadly. European collaboration for the joint development of joint techniques and their contextual assessment and evaluation was seen important.

Multidisciplinary research involving behavioural and social sciences, brain research, medicine, physiology, technology, economics etc. was considered important by experts in several topical areas. Multidisciplinary research on work conditions, well-being, and productivity should be carried out on an intensive, long-term and broad collaborative basis.

The importance of maintaining and promotion of work ability was pointed out repeatedly. The effectiveness of vocational rehabilitation as a means of intervention in cases of manifested or threatening decrease of work ability and competence should be studied systematically. Registers and statistical data were not considered sufficient basis for research. Research should aid the shift of focus in vocational rehabilitation to the environmental conditions. Although the problems motivating rehabilitation are individual, the solutions are usually environmental rather than individual.

The importance of understanding the linkages of the different phases of life was pointed out. Youth development affects in working age and parents' well-being is reflected in children. Similarly, occupational health is affected by other phases of life and vice versa. Thus, research should not be mechanically restricted within the borders of single phases of life when conditions of health are under concern. Multisectoral and multilevel approaches were seen important.

The implementation of the EU norms concerning work conditions was seen important. What kind of organisational consequences for instance normative technological control measures may have, was a question raised by an expert as a focus for study and evaluation.

C. On macro-level factors

Several participants had a strong view that global economy may be reflected in the work life in many unknown ways. Research was seen important to gather reliable information on labour market situation, labour force, and psychosocial conditions at work in the whole EU in order to develop needed timely actions.

In a rapidly changing working life quickly administered surveys were seen important in order to pinpoint the needs and targets for further research or other action. Economic recession motivates such research across countries at present. It was also emphasized that economic recession should be taken into account as a background condition in all studies.

D. On EU strategies

European collaboration guided by the EU commission in the psychosocial field was characterised as scattered and it was seen uncertain whether anybody is really aware of the situation. It was admitted that the Commission tries to guide research activity, has defined priorities and has made an effort to carry out discussion. Discussion and exchange may increase awareness, which is a necessary condition for coherent prioritization and cooperation in the countries. Sufficient capacity for surveying the development in working life should be made available in all countries, which would facilitate recognition of general problems and make it possible for the Commission to act promptly and comprehensively enough.

Some participants made the comment that European agencies should support risk taking in projects that approach totally new problems in new areas and within new frameworks.

EU-wide networks were seen important and fruitful between countries that have long tradition in psychosocial research. They should invite new EU members and those countries which have not had much earlier activity in this area as partners in the networks. This was seen as a means to facilitate discussion and exchange of information and to transfer good practices in research and development.

E. On application of research in practice

The delay of the transfer of information of research results into practice was critically pointed out. The delay begins already from the delays in the publication of research documents. Even in cases where models for good practice are available, the application lags behind. Systematic evaluation was seen necessary to identify the responsibilities and to develop proper channels and agents for the facilitation of application.

Opinions on the responsibilities of the transfer of research information in the organisations differ. Some considered it as the duty of the researchers while some others saw that it would be more effective with the aid of specially trained facilitators, who should be included in the project staff from the beginning. The

latter saw that the researchers do not always have such capacity, which may at least partly explain the underutilization of research results.

Effective channels for dissemination of information and knowledge must be sought for, recognized and developed on a broad spectrum, e.g. in schools, at work places, and in public services, which meet large population groups. In order to do this, action models and methods should first be developed and then methods for facilitating their adoption and use by various target groups.

Among the topical areas where available information would give much broader basis for application was information on sleep and its connection with brain functions and health. Models developed for different types of working hour schemes were not seen adequately applied. Similarly, the large body of information and models for good practice to prevent violence and harassment at work was seen underutilized.

F. On research methodology

Methodological inconsistency was seen as a major problem preventing comparison of results between studies. A strong emphasis should be put on this matter in order to raise the level of the research to a scientifically appropriate level.

Critical comments were made by one expert on the way in which work-related factors of well-being are usually assessed. Mere assessment by the persons was not considered enough. Independent information on work was also considered necessary. After identification of critical factors, reliable standardised measures of assessment are needed. Only on such a basis can interventions be developed properly. Standards are needed also for interventions, and they must be evaluated on a broad basis, not only in specific target situations. Random experiments were considered necessary, while the common before-after approach of evaluation was not seen sufficient.

There are common health problems in Europe, which should be studied comparatively, as pointed out by many of the experts. Depression is one of them and it is a major problem causing inability to work. Comparative research was considered important to find out the role of e.g. the aging of the population and other demographic factors, the role of health services and insurance schemes, and changes in the working life. It was seen important to do research based on representative samples, because concentration on special groups may lead into bias.

Investigation of the differences between countries in mental health in EU was seen important for e.g. bench marking. On the basis of good examples, interventions should be carried out and investigated where the need is the greatest.

The experts pointed out that there are excellent previously studied cohorts in Europe, which could be utilized more broadly and efficiently both for the service of practical purposes and for theoretical interests. When forming new cohorts for study, a broad future use should be taken into account already in the planning phase.

4.7. Expected trends and new challenges

A request was made to the experts to characterise expected future trends of work life and of research needs. As in the previous section, the comments were grouped according to the main themes and are given below.

A. Physical environment

Climate change and its reflections on working life on the macro-level, e.g. restricted commuting between home and work and increased working at home or elsewhere as the result, was seen as an area, where research should be planned and started in time. This was an area where paradigmatic development was seen as a necessary first step.

B. Demographics and social environment

Migration is expected to increase. Need of research on the special psychosocial issues at work, the health needs and working ability of the migrant workers was seen increasing. At the same time work places become increasingly multicultural. Several experts emphasized that research should be strongly and quickly increased on organisational cultures and functions and well-being in multicultural work places. Prevention of social exclusion should be a part of these projects.

The sc. 24 hour society is becoming more and more commonplace, with the IT sector producing 24-hour services in the lead. This is expected to increase for instance sleep disorders. Other health and safety issues may also become important and, therefore, basic research was found important on a comprehensive scale.

Increasing traffic increases the risk of more accidents. Especially professional rubber wheel traffic has shown trends of increasing insecurity. This is a global problem, reaching beyond borders and is, thus, a joint problem for study and prevention on the European level.

Violation of regulations of working hours is common and continuously an important topic for basic research. The topic is hot for the social partners as the solutions concerning working hours are usually costly. This was thought to increase the motivation of the social partners to participate in research.

C. Research policy and strategies

It was expected by the experts that companies become increasingly conscious about the cost-benefit aspects of R&D activities. Integration of economic productivity with psychosocial health issues was seen inevitable in order to get a basis for motivation of the social partners in research collaboration.

The mechanisms of the diffusion of R&D products into the work organisations and the mechanisms leading into the application of research information in policy making were seen important topics for research. The results were seen to reflect possible ways to improve the presently common underutilization of research products.

Recently made Mental Health Agreement in the EU was seen as a remarkable turning point. It shows that increased attention is paid to mental health issues in organisations. This was thought to increase

expectations of research information on the work-relatedness of mental health problems and of the development of preventive measures at the work place. Cooperation of OSH and vocational rehabilitation sector could have added value, and should, therefore, be developed and evaluated.

Development models found useful in one country should be implemented and evaluated in other countries and then to be compared. As one example of possible techniques, the sc. change laboratory method was mentioned, of which firm evidence is available from some areas. With this method, the change processes are implemented at the work place by the organisation and the researchers are conceptualizing and analyzing the process. This could create a win-win situation, where interaction with a real development case may give a basis for theory construction for the researchers. This type of technique was seen as one possibility to narrow the gap between researchers and work places, which was thought to be often too wide in European countries.

Globalization was expected to increase the probability of the carry-over of the effects of any major events almost anywhere in the world to European countries. Global economy, for instance, affects work life in all European countries. To anticipate these effects reliable information was seen necessary on e.g. the situation in the labour market, on labour force and on psychosocial conditions at the work places in order to develop and agree upon needed actions.

It was also suggested that international crisis situations, for instance the present economic recession should be utilized as natural experiments to study conditions for health. On the other hand, prevention of the effects of the economic recession and social exclusion were seen urgent topics for research and intervention in Europe. Prevention must include economic and political actions. Sc. social firms were seen as one example of possible preventive measures, which should be created and evaluated.

As an increasingly multicultural area, Europe was thought to offer an excellent field for studying culture-related issues in work organisations. The experience gained could be used also globally in European companies when they are moving or expanding to other parts of the world.

Working ability was expected to be an increasingly important factor in the recruitment and a factor defining broadly the availability of labour force. Research in this area was seen insufficient.

Collection of data banks on up-to-date information on various fields of work and health on the EU level was seen as a means to facilitate decision making on research and needed actions.

D. Theory and conceptual issues in research

Holistic, interdisciplinary understanding of health with its positive and negative aspects and recognition also its connections with the environment was seen necessary in research. Awareness and readiness for the integration of most advanced biological sciences (including DNA investigation) as well as information and communications technology in the study of work-related health should be increased.

Paradigmatic change is expected and seen necessary to understand, study and develop new forms of work based on technology assisted communication. The same concerns multi locational, distributed and virtual work, which are becoming more and more common. Comprehensive new understanding is needed on what work environment may mean, when work is done at homes, in trains and airplanes, holiday resorts etc.

Organisation of leadership and rewarding will be fundamentally changed. A point was made that present models, concepts and tools are developed for traditional work environments and do not fit into the future.

Recognition of emotions as aspects of organisational behaviour, leadership and well-being was seen as an increasing trend, which should lead into corresponding reformulations in the organizational theories as well. This view was based on the critic of previously dominant cognitive emphasis.

5. Evaluation of the survey

The aim of this survey was to gather information on the research and development in the field of psychosocial factors at work and related health issues in Finland, including the present and future trends and challenges in the area. The interview of leaders of the established expert groups was chosen as the method of collecting the material. Altogether 15 senior experts were invited to participate and all of them agreed. They were motivated and interested in this project and expected this to become a useful source of information in the field.

One of the critical questions that can be raised is how representative the collected information is to characterise the overall situation in Finland. The report represents research by groups with long-term background and comprehensive professional basis in the field. As an effort to take care of the representativeness in that respect, the interviewed experts were asked to name other important agents in the field. If senior experts, who were not networking with the chosen ones, were mentioned, they were interviewed.

The work by individual researchers and possible beginning groups without known experience in the field was not covered. This does not mean that they do not produce research information or significant other research products. Individual projects in the universities or other institutes could contribute much to the specific topics, but would unlikely change the view of general trends. As the aim of this survey was also the collection of the opinions of the experts on the overall needs in research and development in this field, the omission of the newly started researchers was not a major problem given their shorter and more limited experience in the field.

The survey gave a general overview of the main streams of the R&D work carried out in the health-related psychosocial field in working life in Finland. Equally important were the comments and suggestions made by the experts on the state of the art in the field, on the future expectations concerning work life and its development, and on the related challenges for research and development.

Appendix 1

NEW OSH ERA/Finnish Work Environment Fund/RK

Themes of a semi-structured interview of researchers

Name:

Working place and unit/group:

1. Personnel resources of unit
2. Main sources of finance
3. Main areas of interests and research
4. Main theoretical and conceptual framework(s), key concepts
5. Paths leading to present orientation
6. Main approaches in the above fields of research and action
7. Main types of outputs and products
 - a. scientific
 - b. practical, for what kind of application?
8. Most important collaborators in Finland
 - a. established networks or ad hoc project collaboration?
 - b. basis of collaboration, e.g. joint scientific interests, financial or administrative reasons?
9. International collaboration
 - a. established network or ad hoc project collaboration?
 - b. basis of collaboration, e.g. joint scientific interests, financial or administrative reasons?
10. Satisfaction with and/or needs for collaboration (including interdisciplinary) in Finland and on European level
 - a. between own unit and others
 - b. among others in the field
11. Future perspectives and plans of own unit
12. Experienced needs and targets of making effect in the field by own unit and by others
13. Most important areas of underutilization of existing information and knowledge
14. Most important challenges of research and development in Europe in the field
15. To achieve added European value, what should be prioritised in the coming joint call of proposals?

e.g. quickly implemented surveys, background investigations, projects leading to immediate applications, basic investigation.

Appendix 2

The interviewed experts and their work places

Anna-Liisa Elo, Ph.D. Professor, Senior Researcher, FIOH

Jari Hakanen, Ph.D. Senior Researcher, FIOH

Kristiina Härkäpää, Ph.D. Docent, Rehabilitation Foundation

Mikko Härmä, MD. Professor, Director, FIOH

Ulla Kinnunen, Ph.D. Professor, University of Tampere

Mika Kivimäki, Ph.D. Professor, FIOH and University College of London

Kirsti Launis, Ph.D. Team leader, FIOH

Kari Lindström, Ph.D. Professor, Director, FIOH

Jouko Lönnqvist, MD. Professor, National Institute for Health and Welfare

Olavi Parvikko, Senior Inspector, Ministry of Health and Social Affairs

Katariina Salmela-Aro, Ph.D. Professor, Jyväskylä University

Maarit Vartia, Ph.D. Leading Specialist, FIOH

Matti Vartiainen, Ph.D. Professor, University of Technology, Helsinki

Marianna Virtanen, Ph.D. team leader, FIOH

Jukka Vuori, Ph.D. Professor, team leader, FIOH

Several interviewees were from The Finnish Institute of Occupational Health FIOH, because it is the main institution in the area and has broad programmes involving psychosocial aspects of work and health.

Table 1. Main topical areas, theoretical background, approaches, and examples of practical products of the working groups/teams of 15 senior experts in the field of research and development of work-related psychosocial factors and health in Finland

Research topic	Theoretical background	Approach	Practical outcomes & products
Development of organizations and work	Theories on participation Theories on learning Organizational theories, general & on leadership and innovation Systems theories Theories of motivation Developmental work research Activity theory Sociotechnical theory (Lewin) Action regulation theory (Hacker) System theoretical model of social and mental spaces (Lewin, Nonaka, Takeuchi) Vartiainen)	Experimental field research Long-term R&D collaborative projects in organizations e.g. airport, railroads, forest industry, hospitals Consultation in reorganization of communal structures & in development of services Long-term studies on organisational change processes Case studies, to contact new areas Action research Qualitative research, long-term	Tool for assessing well-being and productivity interrelated; for supervisors and team leaders; a general model Comprehensive models for development for various organisations and situations Models for leadership of innovation and transfer of innovations in practice Popular scientific book on leadership theories
Organisational culture	Multidimensional context-specific model of mobbing (harassment) Work-environmental model Stress models	International surveys Intervention research Consultations	Gender Equality Planning Act Multicultural Barometer Leaflet guides, e.g. 10 Act Sheets on mobbing and harassment
New ways of working: mobile and distributed work	System theoretical model Action regulation model Paradigmatic development to be made	Case studies, qualitative and quantitative Surveys with follow-ups Action research	Guide books and action models for work places and OSH Web tools for virtual teams, including survey methods, guidelines and check lists
Working hours and sleep disorders	Chronobiological model Models of regulation of activation Stress models, including psycho-physiological models Epidemiol. models of health disorders	Experimental sleep research Experimental stress research Epidemiol. broad scale research on diseases (e.g. CHD) Controlled intervention research on working hours & ergonomic conditions	Healthy and functional models for working hour schemes Products supporting application of models and good practice: popular books, brochures, training and information products Popular scientific books on consequences of poor working hour schemes Models for improvement of sleep disorders; applicable to other problems as well with OSH guidance
Work life & other spheres of life	Effort-resource theory (Demerouti, Bakker) Effort-recovery theory (Meijman, Mulder) Stress and coping theories (e.g. Lazarus)	Cross-sectional and longitudinal research	

Positive health Positive organizational behaviour (POB)	Salutogenic theory: SOC (Antonovsky) Conservation of energy theory (Hobfoll) Positive emotions (Fredrikson)	Field research Development of practical models & tools Training, information	Path to work engagement, a technique on recognition and strengthening of strengths and potentials Guide books on promotion of resources Adaptation of Schaufelli's Assessment Method of Work Engagement to Finland; on line in www.FIOH, guidebook YLE programme series on happiness; particip. in product.
Stress and burnout	Stress theories (e.g. Karasek) Burnout theory (Maslach, Schaufelli) Effort-reward theory (Siegrist) Effort-recovery theory (Meijman, Mulder) Effort-resources theory (Demerouti, Bakker) Psychophysiological stress models	Longitudinal and cross-sectional studies Intervention research for prevention of burnout Development of services, including rehabilitation of burnout patients Development of web services for self-help	Guide books on prevention of burnout Translation and adaptation of assessment methods into Finnish, e.g. effort-reward imbalance questionnaire ERI Internet services for self-help of stress and burnout clients: Internet-based and Computer-aided Cognitive Therapy CCBT Standardized methods and guide books for assessment of burnout
Diseases and ill health	Epidemiological models Disease-specific psychiatric models Stress theories (Karasek, Siegrist) Psychophysiological stress model Burnout theory (Maslach, Schaufelli)	Epidemiological study of etiology of physical and mental diseases, e.g. depression, Whitehall study on CVD etc. Big cohorts of population and organisations Repeated measurements Measurements also independent of subjects Research on prognosis of diseases Clinical research (with minor work orientation)	System for feedback & benchmarking in internet; based on results of study of hospitals Book of guidelines on work-related mental health (Finnish and English) Book on Healthy Mind; includes action models Guide book on good practice of treatment of depression by OSH
Work ability & rehabilitation	Theories of competence Theories of motivation Theories of goals of action Multidisciplinary models of rehab. science : person in environment Theories of work ability	Epidemiological research Clinical research Intervention studies Development of action models and tools for practice	Development of services for different groups, e.g. those returning to work from long sick leaves and for immigrants Holistic action models for improving work ability in different conditions Support action model for employment e.g. for immigrants Guide books for different target groups e.g. for immigrants and organisations Research of work ability of special cohorts, e.g. the young, drug addicts, post-traumatic, military service men

Life-course development	Personality theory Theory of social learning (Bandura) Conservation of energy theory (Hobfot) Individual resource models (e.g. SOC: Antonovsky) Theory of planned action (Ajzen) Life-course development theory	Life-long longitudinal research Multidisciplinary research: psychology, medicine, education, technology Intervention research	Towards Working, Life group method From School to Work group method Job Search Program Towards Successful Seniority program
Well-being & economic productivity	Theoretical basis scattered; key concepts: intellectual capital, intangible assets	Indirect approach on productivity via assessment of competence and performance	