Monitoring Psychosocial Risks at Work

Maartje Bakhuys Roozeboom, Irene Houtman & Seth van den Bossche

1. Introduction

Since the early 1990s, work-related stress and issues of workplace violence and harassment are increasingly affecting a growing number of workers. Working within stressful or violent workplaces has a negative impact on the individual, the organisation itself and on society.

The PRIMA-EF project aims at defining and promoting a strong European agenda and a framework for action to address the challenges of work-related stress, violence and harassment at work. It also seeks to provide a comprehensive point of reference for European companies, employers, employees, trade unions, policy makers, occupational health and safety experts and services. The development of international indicators is one of the first steps forward in this process.

Identifying the main indicators on psychosocial risks at work and psychosocial risk management is very important for the process of monitoring these issues across the European Union (EU). Dollard et al. (2007) emphasised the importance of surveillance systems of psychosocial risks, factors and outcomes. They argue that these monitoring instruments play a vital role in identifying groups and occupations at risk and evaluating the effectiveness of programmes, policies and interventions. Monitoring is defined here as the measurement and analysis of (relevant) indicators with the aim to identify the prevalence of, trends in, and impact of these indicators at the individual, organisational or higher order level to guide policy making and preventive action (WHO, 2004).

The first step in the development of international indicators is the development of an indicator model. An indicator has been defined as a concept that is operationalisable, and is considered to be relevant to a specific context, research or policy (WHO, 2004). This definition implies that all indicators presented in the model are concepts that may or will eventually be operationalised. The operationalisation additionally asks for validity checks etc. However, this latter elaboration of the research will not be within the scope of this book chapter.

Work-related stress is generally understood to be a pattern of reactions that occurs when workers are presented with work demands not matched to their knowledge, skills or abilities and which challenge their ability to cope (Houtman, Jettinghoff & Cedillo, 2007). When there is perceived

imbalance a so-called stress response may occur[1] and when it persists in time ill-health will be the result.

This chapter will present a European indicator model for psychosocial risk management with a special focus on work-related stress, physical and psychological violence, harassment and bullying. The model has been designed in a way that cost-benefit models or issues relevant for psychosocial risk management as well as social dialogue and corporate social responsibility could be linked up with, or incorporated into, the model. The integrated indicator model is used as a reference for the inventory of indicators in the literature. Additionally sensitive data already available will be identified, and gaps in available indicators will be highlighted. An indicator list which is consistent with the indicator model will be presented which includes indicators thus far not, or not often, operationalised. Subsequently, an overview on available methodologies for monitoring psychosocial risks and psychosocial risk management will be presented. The results of a Delphi-study used to identify priorities of researchers and stakeholders in relation to the indicator list will be presented. Finally, findings and future steps are discussed.

2. Indicator model

In this section, indicator models that are already present are discussed. Criteria deduced from documents that are relevant in this respect are presented, and the indicator model that best fits psychosocial risk management and relevant criteria are identified.

2.1. State of the art

There already are some models presenting indicators on work-related risks (and health) in Europe. The European Foundation for the Improvement of Living and Working Conditions (EuroFound) has been active in the area of indicator development for more than a decade now. Dhondt and Houtman (1997) adopted a quite general model for indicators of working conditions that is relevant attentive to the psychosocial area. This model included indicators for several categories of risk: indicators for means (like company policy), worker characteristics, non-manipulative indicators (company characteristics), work environment including the psychosocial demands, and outcomes. At a later stage indicators were expanded by the European Foundation into a broader model covering (1) job and employment quality as a central issue, which was determined by (2) health and well-being, (2) career and employment security, (3) skills development, and (4) reconciliation of working and non-working life (EuroFound, 2002). On the basis of the work of the EuroFound, in an ILO seminar Tangian (2005) suggested a composite set of indicators of working conditions, comprising of (1) the physical environment, (2) time factors, (3) stressing factors, (4) independence, (5) collectivity, (6) social environment, (7) career/training, (8) work-life balance, and (9) health-based indicators.

A very different model looking at indicators on work and health comes from an EU project that has been undertaken and subsidised from the 'Health Monitoring Programme' between 1997 and 2002 at the Directorate General Health and Consumer Protection on 'Work-related health monitoring in Europe'. The policy cycle was used to construct the model resulting in three main indicator levels of (1) policy, (2) workplace, and (3) health. The workplace indicator level was subdivided in (2a) organisational policy domains, (2b) activities, (2c) output, and (2d) outcome indicator (Kreis & Bodeker, 2004).

2.2. Content criteria

In developing an integrated model on the process of work-related stress important aspects should be taken into account, and all deduced from previous indicator models as described above, as well as from the PRIMA framework (as discussed in chapter 1). Three aspects emerge as important building stones of the indicator model. Exposure, outcome and action indicators should at least be identified. A risk assessment, obligatory in the EU regulation framework, aims at establishing the risks (in this case

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[1] These responses at the individual level are (1) physiological responses indicating alertness and activity, (2) emotional responses indicating tenseness, (3) cognitive responses like a narrowing of attention and perception, and (4) behavioural responses like aggression, less vigilance or making mistakes.

psychosocial risks), and their harmful effects pointing to action as necessary to reduce the risk. The indicator model should be developed in a way that it illustrates the exposure or causes and the outcome or consequences of work-related stress, as well as preventive action and interventions. When indicators are chosen well, more insight can be gained on the effectiveness of interventions and preventive action, as well as on the factors that contribute to their effectiveness, for example social dialogue and employee participation. Indicators on the prevalence of risks and outcomes, as well as on preventive action and interventions will give more insight on the awareness of the impact of psychosocial risks and their consequences.

In addition, the control cycle should be the basis of the model. The psychosocial risk management process is a cyclical process, proceeding from risk assessment to risk reduction action and re-assessment of risks. EU enterprises are obligated by EU law to repeat the risk assessment itself periodically. Action indicators may be deduced from changes in exposures and outcome levels *measured over time*. The monitoring of indicators should provide trend information, and it is important to be able to indicate changes in time for the (core) indicators. Indicators for monitoring should therefore remain the same in time, and be sensitive for change on the issue they are supposed to indicate. Therefore, the validity of the indicators and even more of their operationalisation are key quality indicators themselves. Also at organisational and societal level, a cyclical process will take place. When the development is a negative one, long term absenteeism and less productivity may result, leading to financial costs for the organization or even for society. The cyclical aspect of the model stresses the importance of a follow-up of the exposure-outcome relationship, in order to monitor if the follow-up heads towards the positive or negative outcome and follow-up measures - when taken- result in a (positive) change.

Finally, three levels of exposure, impact and action should be taken into account: the level of the individual worker, the organisation and society as the impact of work-related psychosocial risks and issues such as work-related stress and workplace violence, harassment and bullying reach beyond the workplace level.

2.3. Contextual criteria

The three criteria as discussed above could be presented as content criteria, since they relate to the definitions and the process of the primary topic. Apart from content specifications the indicator model and indicators have to take into account several contextual criteria that also appear to be important considering their practical implementation (e.g. WHO, 2004; Dollard et al., 2007):

o   The indicator model and indicators per sé should be considered to have *policy relevance next to expert assessments*. It has been argued that expert assessments may not necessarily be in accordance with the burden of disease caused by the environmental (risk) factor under consideration, nor with the assessment of national policy makers;

o   *Data availability* is another important and practical consideration to take into account. New initiatives will always take a lot of time to develop and materialise, unless part of what is initiated is already covered by an ongoing action;

o   *Comparability* considered from a multinational perspective is often considered to be important as well. The opportunity to perform sub-group analyses e.g. by country (or country cluster), sector, occupational group or demographic characteristics is important from a benchmark point of view.

The above criteria indicate that it is important to closely involve stakeholders (employer and employee representatives, as well as policy makers) in the discussion on which indicators to use in monitoring psychosocial risks at work, their impact and preventive action. Next to this, it is important to take into account monitoring instruments that are already available. The 'European Working Conditions Survey' (EWCS) which aims to monitor exposure to risks and the impact on health of indicators for 'quality of work' is one of them. At present this survey has been conducted four times in the EU, and several data sets are available, including new EU-member states and candidate countries, even countries that formally are not part of the EU (e.g. Norway and Switzerland). This dataset does cover psychosocial risks but it should be critically assessed whether and how it meets the other criteria presented above.

The final issue implies that comparability is an important issue as well. This issue may be considered equivalent to benchmarking by risk groups – e.g. countries, sectors, or groups by gender,

age, ethnicity or other distinguishing aspects. This final characteristic implies the importance of comparable (statistical) analyses to identify significant differences.

2.4. The indicator model

The process of work-related stress can be summarized in a model which illustrates the risk factors for work-related stress, consequences of stress at three levels and individual characteristics, as well as their interrelations. In this model, workplace violence will be perceived as a risk factor for work-related stress (Figure 2.1).
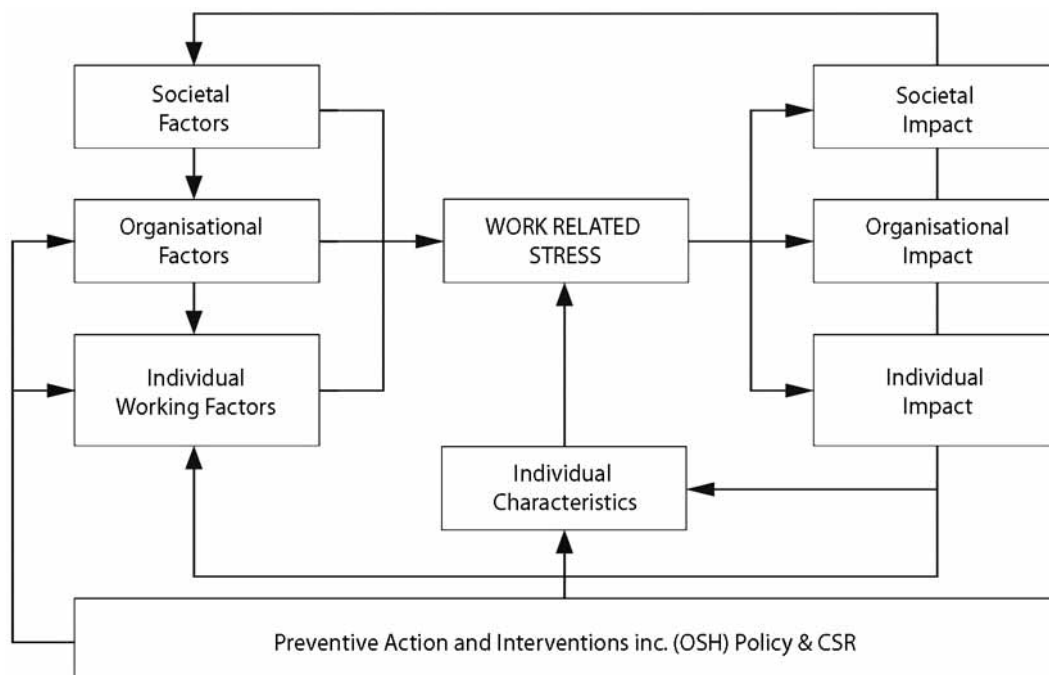

Figure 2.1.: Indicator model on psychosocial risks at work linked up with preventive action

2.4.1. Exposure indicators

Much research has been done on the subject of work-related stress and several models of indicators were used. Most common is the Job Demands - Control (-Support) model, developed by Karasek in 1979. This model hypothesises that stress particularly occurs when the individual perceives high job demands and low job autonomy, but also social support is believed to play an important role in the development of work-related stress (e.g. Kahn et al., 1964; Johnson & Hall, 1988; Karasek & Theorell, 1990). Other stress models more strongly point out the importance of individual factors that contribute to the effect working conditions may have on work-related stress. For example, according to the 'effort-reward imbalance' model (Siegrist et al., 1996) work-related stress is on the one hand related to an imbalance between the amount of effort a worker has to deliver and the reward a worker receives, and on the other to an individual characteristic called 'over-commitment'. Individual characteristics like self-confidence and commitment to work are in this respect perceived as moderators in the process of developing work-related stress. The prevailing view, however, is that certain working conditions are related to psychosocial risk factors and the development of work-related stress. As discussed in chapter 1, examples of these working conditions are: too high or too low job demands, fast work pace, time pressure, tight deadlines, lack of control over work load and the work process, lack of social support from colleagues or staff, job insecurity.

In addition, organisational factors like sector, company size, composition of the workforce, staffing, restructuring or organisational change can all have a major impact on the prevalence of different psychosocial risks. As the economy leads to global and European increases in competition for market shares and survival, pressures will mount at the organisational level. This, in turn, can lead to organisational changes that affect working conditions for individual workers. In this sense, the

exposure to psychosocial risks can be observed on several different levels, related to e.g. the organisational context or the societal context.

2.4.2. Outcomes indicators

When workers are exposed to risk factors at work, work-related stress reactions may occur. These reactions may be emotional, behavioural, cognitive, and/or physiological in nature. When stress reactions persist over a longer period of time, they may develop into more permanent, irreversible health outcomes. For instance, exposure to psychosocial risks can lead to anxiety, depression and post-traumatic stress syndrome, chronic fatigue, musculoskeletal problems, coronary heart disease, certain types of cancer and series of minor health complaints as psychosomatic symptoms, migraine, stomach ulcers and allergies (Cooper et al., 1996). The impact of work-related stress on the health of the employee has negative effects on the organisation. More health complaints, performance deficits when people keep on working, higher sickness absenteeism, impaired productivity and higher turnover rates, are frequently associated with the experience of stress (Cooper et al., 1996). In addition, the exposure to psychosocial risks can also have impact on society. Medical expenses arising from the stress experience may become a substantial cost to society.

2.4.3. Action indicators

Since the PRIMA-EF project aims at establishing a framework that will accommodate existing (major) psychosocial risk management approaches across the EU, a monitoring instrument should include indicators on preventive action and intervention as well. These actions contain measures on risk prevention, but also on risk assessment, implementation of interventions, evaluation of measures, as well as structural measures like policies etc. These different kinds of action can have a direct impact on the exposure to work-related risks, but they can also have a more indirect effect, either because they are primarily directed at the outcomes (e.g. complaints or absence levels) or when they are part of organisational strategy, social dialogue or the corporate social responsibility.

2.4.4. Indicators on cost-benefits

Indicators of cost- benefit of interventions, the so-called action indicators, are related to costs of the intervention on the one hand, and the effectiveness of these interventions on the other. The cost aspect may be most easily covered when asked at the organisational, sectoral or national level. Costs are produced by the direct costs related to having the intervention being implemented. In addition, costs, less often considered, are those involved in time or production loss when taking courses, or when being absent from work due to the negative consequences of work-related stress. At the more macro level, societal costs at all sorts of subsidies or other support for taking measures, as well as societal information on drop out of workers (absenteeism and disability) should be taken into account (see also Koningsveld et al., 2003; Cooper, Liukkonen & Cartwright, 1996).

2.4.5. Indicators on social dialogue and corporate social responsibility

The issues of social dialogue and corporate social responsibility (CSR) relate to effective risk management and also apply to psychosocial risk management at the organisational or higher order levels (see also chapters 1, 4 and 6). Social dialogue relates to the issue of participation that is key in psychosocial risk management (e.g. Landsbergis et al., 1999; Kompier et al. 1998; Kompier & Cooper, 1999; Kompier, Augst, Van den Berg & Siegrist 2000; Kompier & Kristensen, 2001). CSR relates to the way health and safety or in this case psychosocial risk management is integrated in policies, systems and structures of business operations. Examples are the way psychosocial risk management is integrated into the company culture, or in learning and development of the organisation, or in addressing ethical aspects. In summary, the presented indicator model offers an overview of main indicators for monitoring psychosocial risks at work, their consequences and the effectiveness of psychosocial risk management in terms of preventive actions and interventions. In distinguishing three different levels, it addresses the interests of the employee, the organisation as well as the policy level.

3. Available methodologies

Next to the importance of main indicators on psychosocial risks at work and psychosocial risk management, also valid methodologies are of high importance in monitoring these issues. Several methodologies are available for measuring indicators depending on whether the indicators can be translated into operationalisations to be transmitted verbally or in a written form, either by regular questionnaire or by digital survey. In the table below, several pro's and con's of these methodologies are presented (Table 2.1).

Table 2.1.: Available monitoring methodologies and their pro's and con's

SURVEY METHOD	PRO'S	CON'S	LITERATURE
Postal surveys, using printed questionnaire	Most questionnaires are validated this way Cost effective because many people answer questionnaire at the same time	Takes time Costly (costs relate to printing and mailing costs and to data entry costs)	Amodei, Katerdahl, Larme & Palmer, 2003
Telephone interview	Is often seen as more compelling, and it is easy to check if a question is understood One is sure that all questions are 'walked through' Minimising disadvantages associated with in-person interviewing Develop positive relation between researcher and participant Improve quality of data collection	Costly Sensitive to socially desirable answers Maintaining participant involvement Maintaining clear communication	Burnard, 1994 Musselwhite, Cuff, McGregor & King, 2007 Greenfield et al., 2000
Face to face interview	Appears very valid	Costly (costs relate to travelling time of interviewer and data entry)	
Internet/digital survey method	Relatively low costs (you don't have mailing and data entry costs) Quick response and quick building of data set	Approach of large number of workers at the same time, but partly workers that may not contribute otherwise Only works when employees are experienced in	Graham et al., 2006 Graham & Papandonatos, 2008 Bar-Ilian, J. Data collection on the WEB for infometric purposes Ritter, Lorig, Laurent &

		computer use (specific non-response)	Mathews, 2004
			Kleijngeld & Samuels, 2004
Registration	Low costs (already available)	Often not complete	
	Relatively 'objective'	Often not to be linked to other data bases, herewith restricted as to studying (cor)relations between indicators	
Combination of methods	Filter questions may add to the utility of using combined methods		Hawthorne, 2004

Postal surveys, using printed questionnaires, may be considered the most traditional and the most widely used way of performing surveys. Because of technological developments, internet or web-based surveys are used more and more. In modern settings, they are often used as an additional option way or addition that precedes telephone surveys or are put forward as an alternative for postal questionnaires. The respondent that uses web-based or internet surveys is found to differ from the normal population quite often (e.g. Kleijngeld & Samuels, 2004). However, it often is very unclear if the population that answers through the web or internet is different as related to the topic of interest to the research as such. As related to specific topics, such as ICT-use, this bias -depending on the specific target of the research- can even be of little interest to researchers. When representativeness is an issue, web- or internet-based surveys may be completed by different types of workers: these are often younger and higher educated (e.g. NEA; Bossche et al., 2006).

Using registers may be a relevant way to collect information on indicators. However, in many cases, registers cannot be linked to many other relevant data of populations. A major problem of registrations is that they often are incomplete, and one does not know what percentage of the target group or target problem is really covered. In some countries linkages can be achieved between several methodologies, e.g. registers and surveys. This may give some idea of the 'problem' of non-coverage, although surveys themselves are samples as well. No publications on these kinds of errors are known to be reported. However, using registers may pose a relevant option for formulating indicators and collecting indicator information at the level of the organisation or higher.

Based on the inventory of available methodologies for monitoring in general and psychosocial risks in particular, it can be concluded that the appropriate methodology of monitoring is heavily dependent on the specific topic and the context of the survey.

4. Available indicators

This section describes indicators already available in relevant surveys. Particularly EU-based surveys and relevant reviews are described.

4.1. The European working conditions survey

As pointed out earlier, important (contextual) criteria for the discussion on indicators are the availability and the comparability of the indicators. In addition, for the PRIMA-EF project comparability across Europe is considered to be very important as well. The EU, by way of the European Foundation for the Improvement of Living and Working Conditions (EuroFound), already has a survey instrument, measuring indicators on 'quality of work and employment', including psychosocial risks for work-related stress and violence and harassment at work: the European Working Conditions Survey (EWCS), and thus provide important indicators as well as validated ones on several EU-countries.

The EWCS should be considered an important (but not the only) starting point in this work next to defining an indicator model. This EWCS is a worker survey based on face-to-face interviews at the employee level. The EWCS is held every 5 years since 1990, the most recent one was held in 2005,

covering all EU-member states and acceding countries. Amongst other things, the EWCS makes it possible to provide information on the prevalence of psychosocial risks in the European Union, trends in time and differences amongst sub groups, e.g. cultural regions within the EU.

Although the EWCS indicator list provides a good starting point for the inventory of important indicators on psychosocial risks, some important indicators are lacking for the purpose of monitoring psychosocial risk management. For example, no indicators on preventive action or intervention are available in the EWCS. Furthermore, since the EWCS is directed at obtaining information on indicators from workers (i.e. at the individual level), it may not provide the necessary information on the organisational and the societal level.

EuroFound itself is rather critical on the fact that surveys may not be the best instrument to capture some of the psychosocial risks at work, in particular on harassment and sexual harassment (EuroFound, 2006). Problems may be related -in this case- to the fact that some of these risks may be difficult to operationalise in general and/or to translate into the different (EU) languages. The Foundation also indicates methodological difficulties related to different questioning, different timeframes (for some of the intermediate measurements), different cultures and populations.

4.2. Other monitoring instruments

Apart from the EWCS, other survey instruments on psychosocial risks and psychosocial risk management are available as well. There is a variety of national surveys on working conditions containing indicators on psychosocial risks, both inside (e.g. EWCO-web-site) and outside the European Union or abroad. Research has been done to inventory survey instruments on working conditions (Weiler, 2007). This inventory of working conditions surveys and surveys including working conditions issues provides a rich picture of survey design and methods that exist for conducting working conditions surveys, as well as a wide range of indicators and operationalisations of indicators that are being used throughout Europe. Although the inventory focuses primarily on working conditions and not so much on psychosocial risks, their outcomes and psychosocial risk management, the Weiler study provides great insight into indicators on working conditions that are used in different survey instruments across the EU. An important conclusion of that report was that more quality of work and employment indicators should be included and that surveys will need to adapt the questionnaires and survey design to changes in work processes, new risks and new demands in relation to workers and organisations.

Another review comes from Dollard et al. (2007) and focuses on the correspondence between surveillance data currently in use and the key psychosocial risks identified in the research literature and by expert opinion in the area. They provide a comprehensive overview of indicators used for monitoring psychosocial risks including exposure (e.g. emotional labour, workplace bullying, acute versus chronic exposure), organisational factors (e.g. organisational justice, organisational change), individual factors (psychosocial states and well-being) as well as outcome variables (stress, sick leave, as well as positive outcomes like engagement).

Based on the inventories of Weiler (2007) and Dollard et al. (2007) and some additional research (EWCO), an inventory has been developed on survey instruments covering psychosocial risks and psychosocial risk management issues. Based on indicators from these survey instruments, an extensive list has been developed of available indicators on psychosocial risks and psychosocial risk management, using the indicator model as a reference. This list formed the basis of a Delphi study in which experts were involved in the prioritisation of the most important indicators on psychosocial risks and psychosocial risk management. In the next section an overview will be presented on the process of the inventory development and prioritisation of psychosocial risk management indicators (methodology) and the results. A copy of the extensive indicator list can be found in the technical report (Bakhuys Roozeboom, Houtman & Bossche, 2008).

5. Prioritisation of main indicators

On the basis of reviews and monitors already available, a large indicator list was constructed initially. It resulted in some clearly different categories and many, sometimes very similar indicators. In order to achieve 'policy relevant' indicators, it was important to gather stakeholders' view on priorities. In order to obtain both researchers' and stakeholders' priorities on the indicators for psychosocial risk

management as had been inventoried thus far, a small scale Delphi study was performed, using both the research group involved in the PRIMA-EF project as well as the Advisory Board and liaison organisations. The Advisory Board and liaison organisations included the social partners, key European Commission experts as well as additional experts and international organisations. The results of this small scale Delphi study will be described in this section.

5.1. Indicator list

The European Working Conditions Survey was used as the primary source of indicators for the indicator list to be constructed (data available and comparable across Europe). The lists of Dollard et al. (2007) and Weiler (2007) and additional EU survey instruments (EWCO) were used to add missing and relevant indicators. The following were used as main indicator categories:
   - individual characteristics and demographics (e.g. age, education, characteristics of household, healthy lifestyle, ability to cope with workload, etc.),
   - organisational characteristics (e.g. sector, economic situation of company, policies/ facilities, organisational culture, industrial relations etc.),
   - work-related risk factors (e.g. employment conditions, organisational design, quality of work, for example job demands, violence and harassment, working time, work-home interference, technology use etc.),
   - outcomes (e.g. accidents at work, health complaints, physical health, job satisfaction, performance, absence, workability etc.), and
   - preventive action and interventions (e.g. assessments, measures, evaluations, participation of employees etc.).

Additionally a distinction was made between indicators to be measured at the level of the employee and indicators to be measured at the level of the employer. Higher level indicators could be identified, but were not included in the Delphi study.

5.2. Methodology

The methodology of the prioritisation process was partly based on the expert forecast on emerging psychosocial risks related to occupational safety and health (European Agency on Occupational Safety and Health, 2007). The extensive indicator list was sent out to all the project members as a pilot. Project members were asked to rate the indicators on their importance in the surveillance of psychosocial risks and psychosocial risk management and were asked to add comments. Based on the ratings and comments of the project members, the list was rearranged to minimise overlap. Particularly the multi-source strategy to come up with the indicator list initially appeared to result in a lot of indicators that were quite similar although not exactly the same. After condensing the indicator list, the adjusted indicator list was sent out by e-mail to all project members, as well as to all members of the Advisory Board and the liaison organisations of the PRIMA-EF project (indicator lists were sent out to all 7 project members, 12 members of the Advisory board and 5 members of the liaison organisations). In total, a response was received from all project partners (response rate was 100%), 8 Advisory Board members (response rate was 67%) and 2 members of the liaison organisations (response rate was 40%). The average response rate was 71%.

In this chapter, an indicator is considered to be very important if the mean value of the ratings is at least or equal to four, an item with a mean value between 3.5 and 4 will be considered as agreed to be important as well. An indicator is considered to be undecided when the average rating is between 2.5 and 3.5 and is agreed to be not important if the mean rating is lower than 2.5.

5.3. Results

Figure 2.2 presents the mean ratings on the main categories of the indicators to be measured at either employee or employer level. Indicators on individual characteristics are only distinguished at the level of the employee. All categories of indicators appeared to be important (M>3.5). In general, indicators to be measured at employee level were rated somewhat higher as compared to indicators to be measured at employer level. Indicators on outcomes appeared to be most important regarding the surveillance of psychosocial risks and psychosocial risks management, regardless of the level of

measurement. Indicators on individual characteristics were rated relatively less high. It thus should be concluded that the stakeholders and researchers did not differ much in their prioritizing; stakeholders even appeared to rate all indicators as more important, thus considerably contributing to the restriction of (upper) range. In the discussion below, we therefore will not explicitly distinguish between the rating of these different groups.

Figures 2.3 and 2.4 show the top five highest rated indicator categories to be measured at employee level as well as at employer level. In 2.3 the top 5 indicator ratings measured at employee level is compared to the ratings of these indicators when measured at the employer level. In figure 2.4 these perspectives were reversed. Indicators on 'assessments' and 'health related outcomes' were among the top 5 of highest rated indicator categories of both the employee and employer measurement level.

At employee level, 'organisational culture', 'outcomes related to job satisfaction' and 'quality of work' were considered to be very important, whereas these indicator categories were rated somewhat lower when measured at employer level. At employer level, 'participation of employees in risk management', 'economic outcomes' and 'evaluations' were considered to be among the top 5 most important indicator categories, whereas 'participation of employees in risk management' and 'evaluations' were rated less high when measured at employee level. Indicators on economic outcomes were not available at employee level.
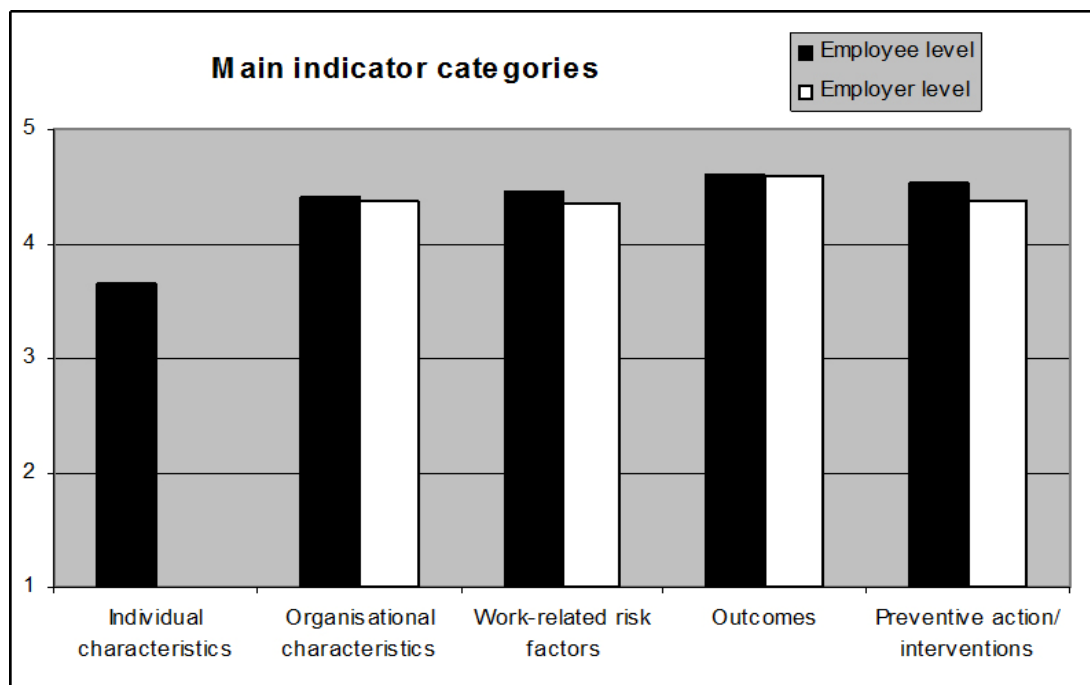

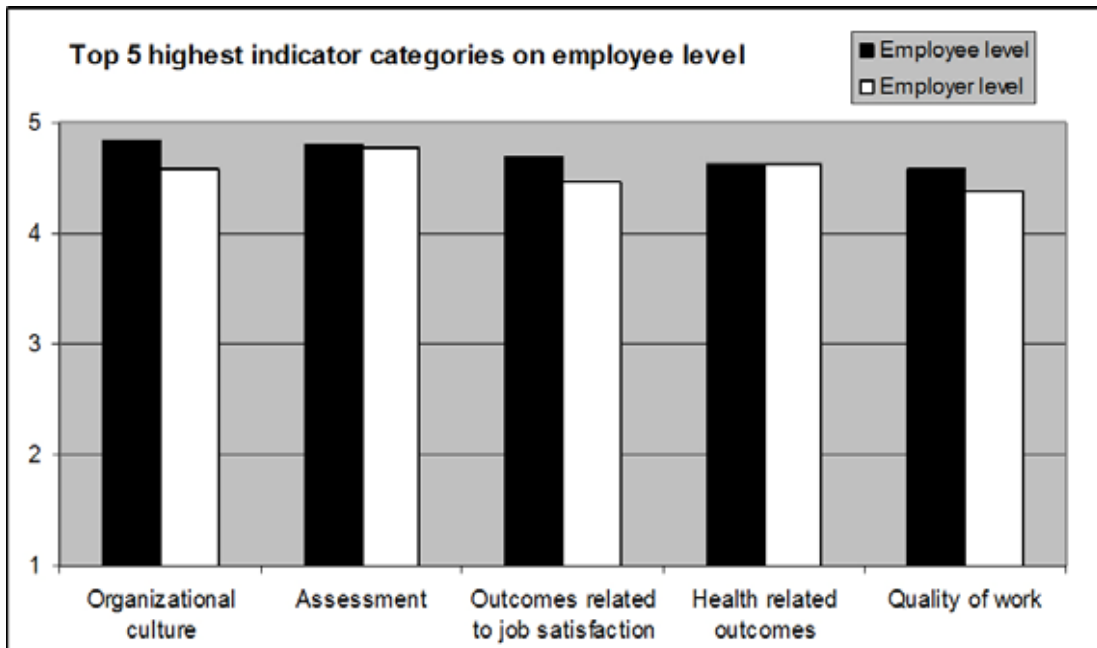**Figure 2.2.:** Mean ratings on main indicator categories

Figure 2.3.: Top 5 highest rated indicator categories based on employee level ratings and compared to employer level ratings
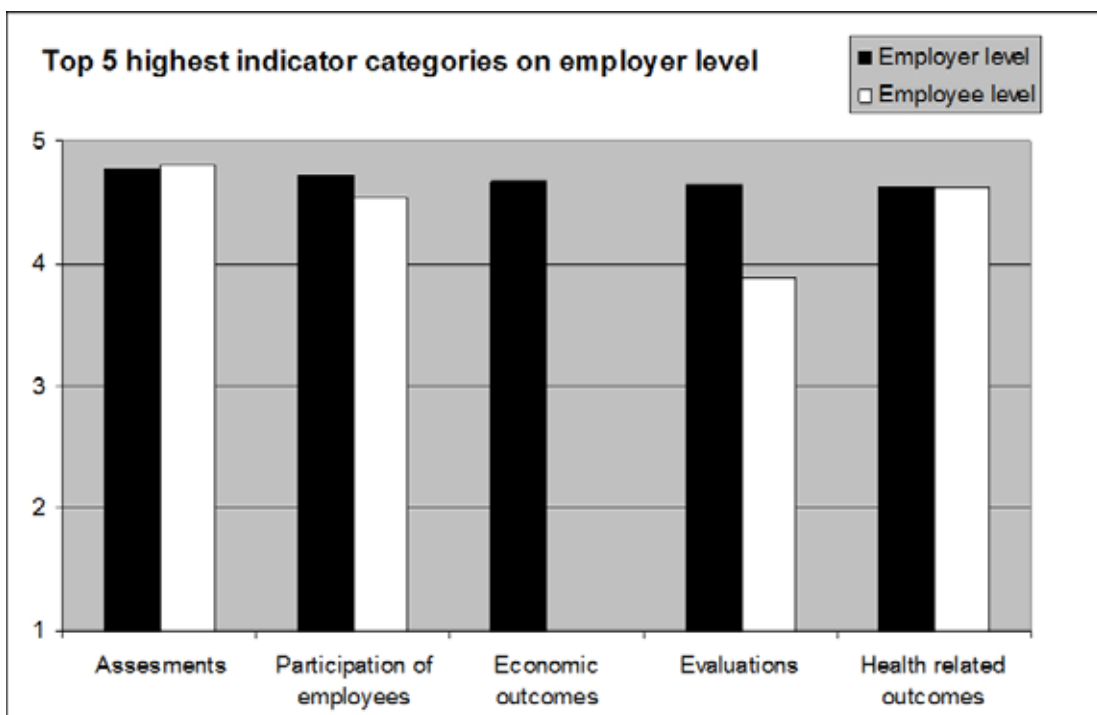

Figure 2.4.: Top 5 highest rated indicator categories based on employer level ratings and compared to employee level ratings

Figures 2.5 and 2.6 show the *lowest* rated indicator categories to be measured at employee level and at employer level, respectively. It is interesting to note that despite the fact that the lowest rated indicator categories are shown, the absolute ratings of the indicators are still considered to be high (all are rated as at least 'important'). Indicator categories on 'industrial relations', 'policies/ facilities' and 'employment conditions' were among the top 5 of lowest rated indicators when measured at employee level as well as when measured at employer level. At employee level, 'general characteristics' (marital status, spouse etc.) were rated relatively low, as well as 'evaluations', whereas 'evaluations' was rated to be substantially more important when measured at employer level. At

employer level, 'organisational design' as well as 'quality of work' were among the top 5 of lowest rated indicator categories, whereas 'quality of work' was considered to be among the top 5 of most important indicators when measured at employee level.
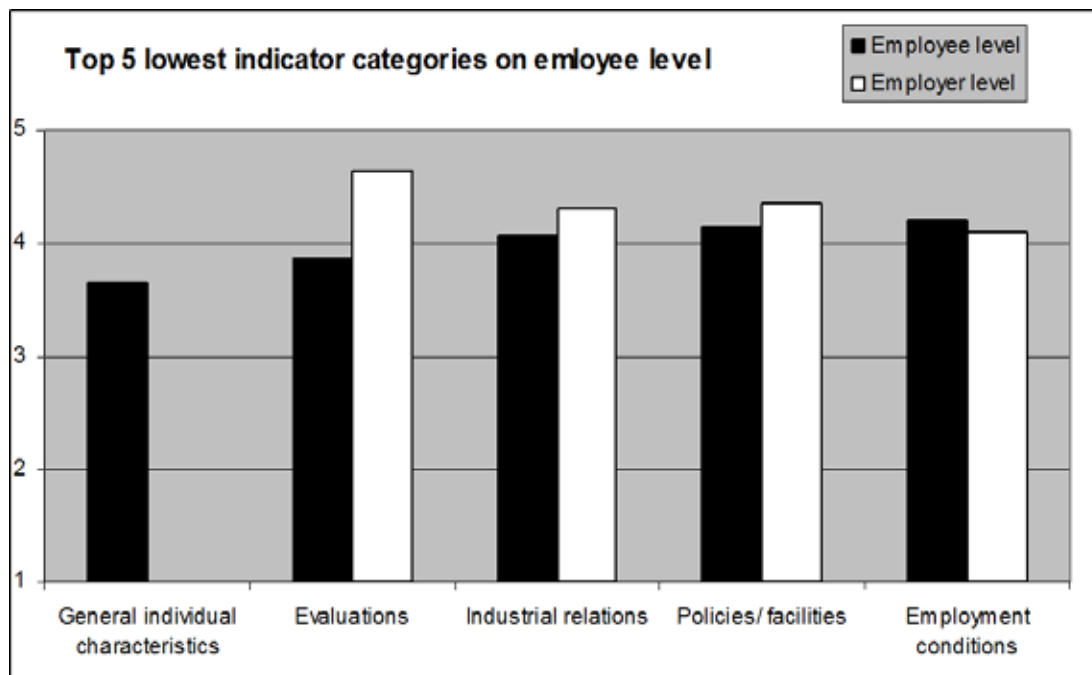

Figure 2.5.: Top 5 lowest rated indicator categories based on employee level ratings and compared to employer level ratings
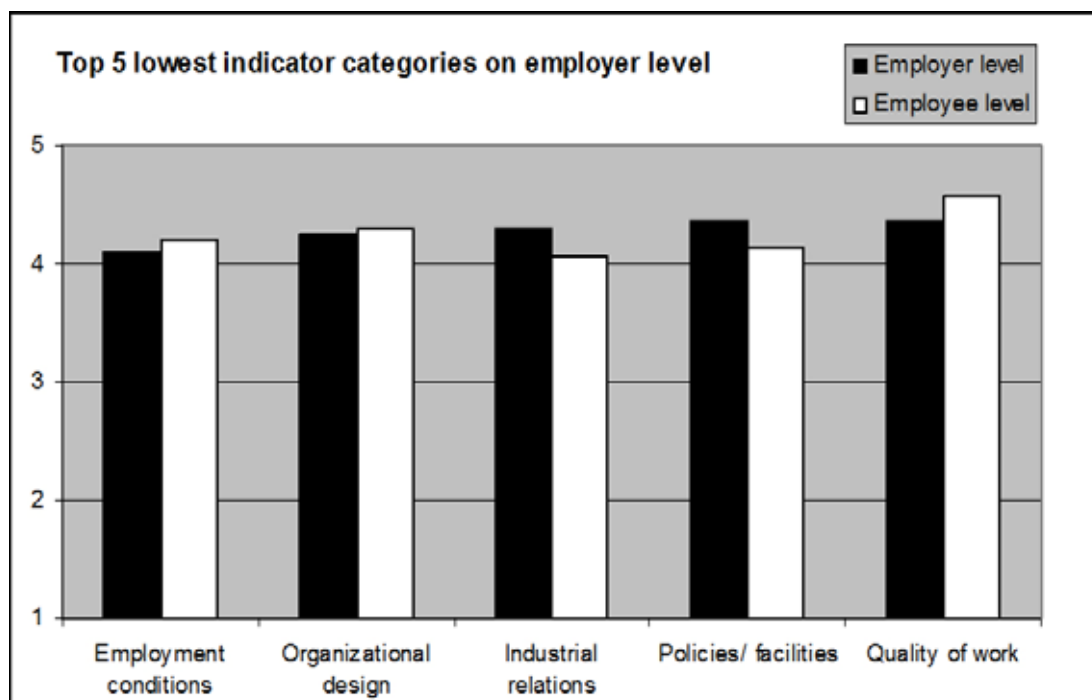

Figure 2.6.: Top 5 lowest rated indicator categories based on employer level ratings and compared to employee level ratings

Figures 2.7 and 2.8 show the highest rated indicators on employee level and on employer level. The most important indicators on employee level were 'job security', 'quantitative demands' and 'stress', which are all indicators related to exposure. Also 'satisfaction with job' was considered to be

among the most important indicators at employee level. All these indicators were rated relatively less high when measured at employer level. At employer level, the most important indicators were related to organisational characteristics, i.e. 'organisational change', 'policy on absence' and 'staffing', as well as to 'preventive action and intervention' (plan of action present) and to 'exposure' (bullying and intimidation). 'Bullying and intimidation' was rated higher at employee level.
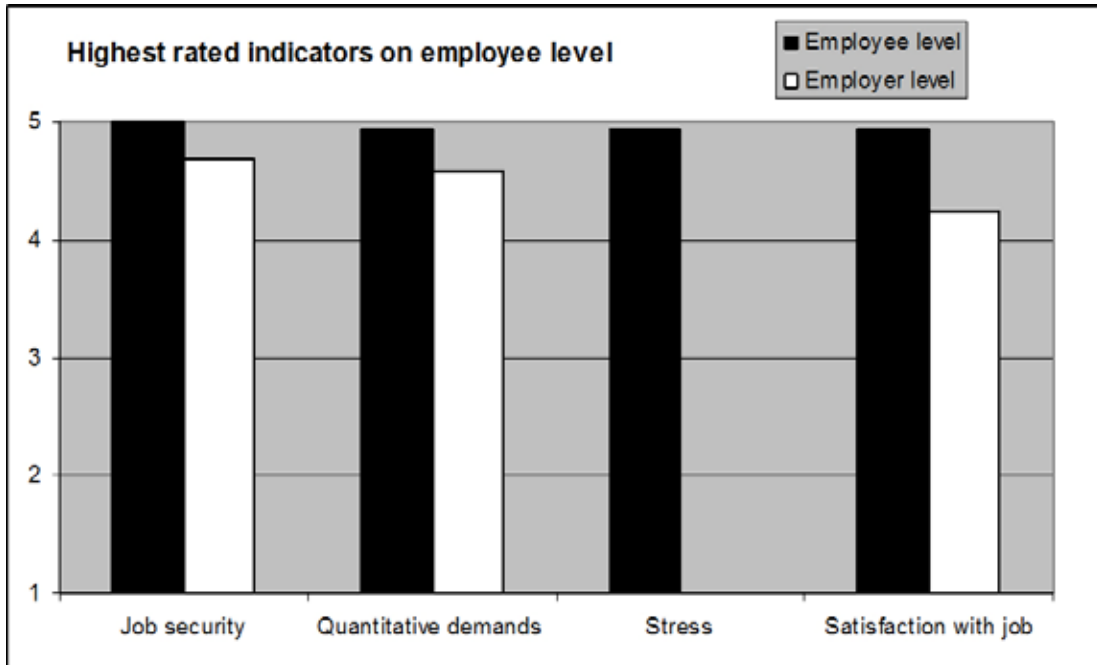

Figure 2.7.: Highest rated indicator categories based on employee level ratings and compared to employer level ratings
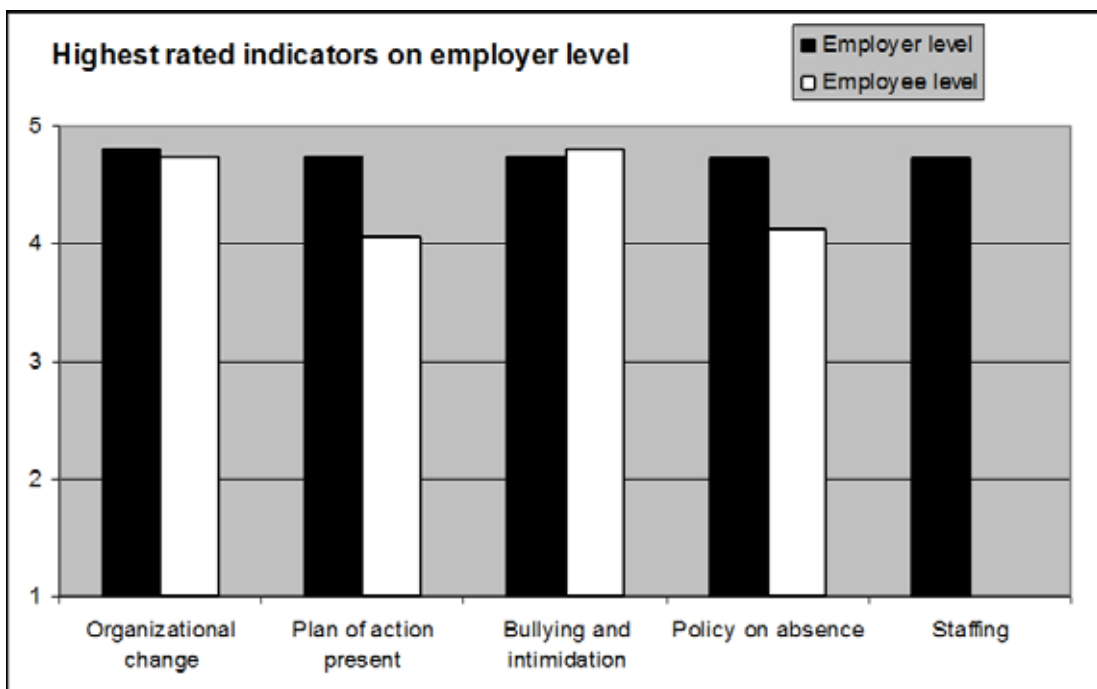

Figure 2.8.: Highest rated indicator categories based on employer level ratings and compared to employee level ratings

Figures 2.9 and 2.10 show the *lowest* rated indicators on employee and employer level. Indicators that were considered to be least important were all indicators on individual characteristics, i.e. 'marital status', 'sharing household', 'having a spouse/ partner', 'people in household working' and 'nationality'. On the employer level the lowest rated indicators were almost all very specific indicators on exposure, or work-related risk factors like 'training ICT use', 'commuting', 'preference for more or less hours of work' and 'computer or machine use'. One indicator that was rated relatively low as well at employer level is an indicator on organisational characteristics: 'market leader or not'.

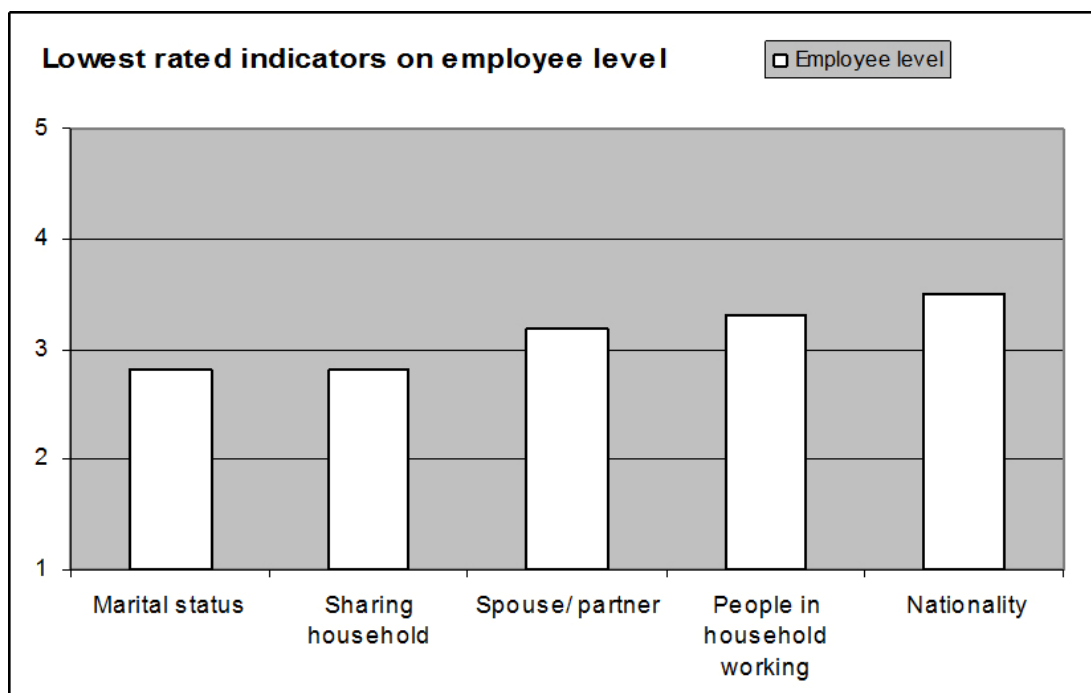**Figure 2.9.:** Lowest rated indicator categories based on employee level ratings and compared with employer level ratings
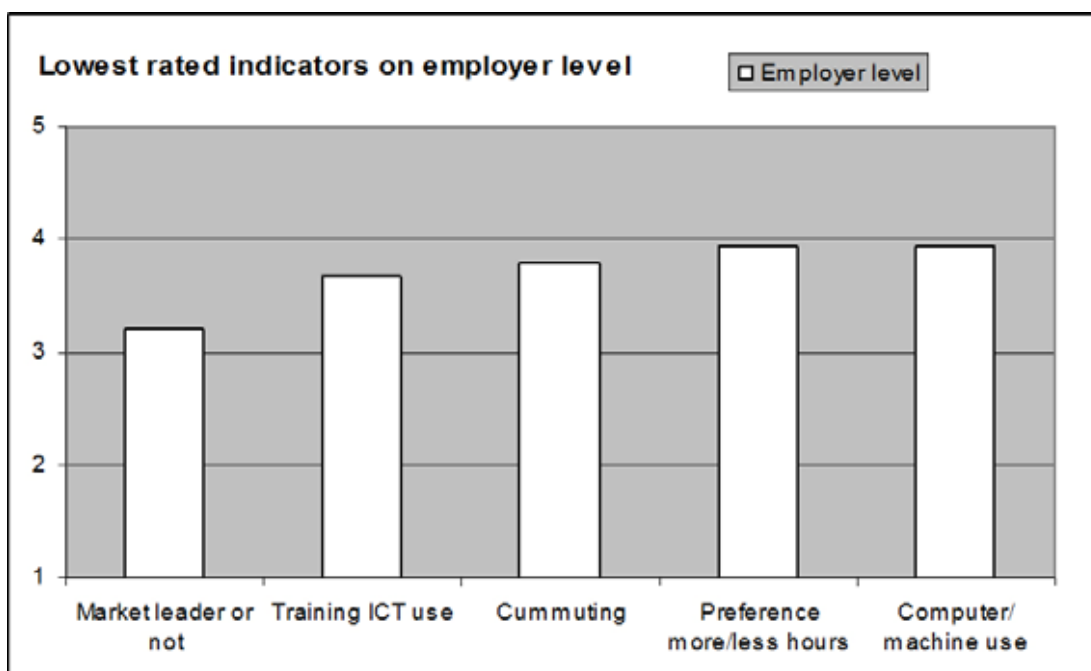

Figure 2.10.: Lowest rated indicator categories based on employer level ratings and compared with employee level ratings

6. Discussion

Overall, several conclusions can be drawn from the prioritisation of indicators on psychosocial risks and psychosocial risk management. First of all, almost all indicators of the extensive indicator list were rated to be at least 'important' and none of the indicators was rated to be 'not important'. Only a few indicators were rated as 'undecided'. Second, the project members appear to be somewhat more critical when it comes to rating the importance of the indicators as compared to the external experts, i.e. the Advisory Board members and the liaison organisations. Despite this difference, most of the time, both groups agree on the order of importance of the indicator categories. Regarding the main categories of indicators to be measured at the level of the employee, both groups rate indicators on individual characteristics as least important, whereas indicators on outcomes and work-related risk factors are rated by both groups to be most important. The project members and the external experts do not agree on the importance of preventive action/intervention indicators and indicators on organisational characteristics, whereas both categories of indicators are rated substantially higher by the external experts as compared to the project members. Regarding indicators to be measured at the level of the employer, both groups rated indicators on preventive action and intervention highest, followed by outcome indicators. However, the project partners rated work-related risk factors to be least important, whereas the external experts rated organisational characteristics to be least important.

Indicators that were rated highest of all, were indicators on organisational change, organisational culture, type of contract, quality of work, health related outcomes, job satisfaction and assessments, all measured at employee level. The highest rated indicators to be measured at employer level were indicators on organisational change, organisational culture, assessments, measures and participation.

In some cases, there appear to be substantial differences in the rating of importance between different indicators in the same indicator category. At employee level for instance, the indicator category on individual characteristics is rated to be least important by both groups. This is mainly due to low ratings on indicators related to marital status, to spouses or partners or to sharing a household, whereas indicators on age and gender are rated as very important. This implies that means of indicator categories have to be read carefully, as an indicator category with a relatively low rating may still contain indicators that are considered to be very important.

Apart from differences in ratings on the importance of the indicators between the project partners and the external experts, there appear to be differences related to level of measurement as well. As it comes to the ratings of the subcategories on organisational characteristics, certain interesting differences can be seen. In general, ratings of indicators on industrial relations and policies/facilities appear to be somewhat higher when measured at the employer level, whereas indicators on organisational culture and the current situation in the firm are rated substantially higher when measured at the employee level. Furthermore, project partners rate general (organisational) characteristics relatively higher when measured at employer level, whereas external experts rate them relatively higher when measured at employee level. The project partners rate the indicators on policies/facilities somewhat higher when measured at employer level, whereas external experts rate them somewhat higher when measured at employee level. Regarding work-related risk factors, no major differences were shown in relation to the level of measurement, except for employment conditions. These were rated substantially higher by the project partners when measured at employee level. Regarding indicators on outcomes, again some differences were shown regarding the level of measurement. Indicators on absence and presenteeism were rated substantially higher when measured at employer level, whereas indicators on job satisfaction were rated somewhat higher when measured at employee level. Regarding preventive action and intervention, indicators on evaluation were rated substantially higher when measured at employer level, especially by the project partners.

The relatively high ratings of almost all of the indicators implicate that monitoring psychosocial risks and psychosocial risk management ideally requires an extensive survey instrument in which almost all issues and topics in the indicator list as produced in this project are covered. Unfortunately, in reality this instrument should not be too long in order to be of practical use. This implies that monitoring instruments on psychosocial risks and psychosocial risk management should have a clear focus. Nevertheless the indicator list as proposed in this document provides a clear overview of important indicators on psychosocial risks and psychosocial risk management, which can be of use in the development of monitoring instruments on psychosocial risk management through employee, but in particular through employer surveys. The latter appear to be lacking at pan-EU level.

On the basis of the prioritisation of indicators exercise completed, the indicator list was revised and some key indicators under the different categories discussed are presented in Table 2.2 below. Additional indicators on social dialogue, corporate social responsibility and policy can be found in chapters 4, 6 and 7.

Table 2.2.: Summary review of key indicators at different levels

EXPOSURE (INCLUDING PSYCHOSOCIAL RISKS)	
ORGANISATIONAL FACTORS	
Policies/ facilities	Facilities for optimizing work-home balance
	Human resource management
	Occupational Safety & Health policies
	Corporate social responsibility as related to psychosocial risk management
	Business strategy
Organisational culture	Open/trust-based relationship between management and workers
	Information from management / feedback
	Communication (bottom up/ top down)
	Organisational justice
Industrial relations	Existence of works council/employee representatives
	Trade union membership
	Collective agreements
WORK-RELATED FACTORS	
Employment conditions	Contract
	Pay
	History of work
Organisational design	Job rotation / cross-training
	Team work
Quality of work	Multi-skilling
	Job demands
	Autonomy / decision latitude
	Job security
	Social support and conflicts
	Violence, harassment, bullying
	Discrimination
	Working time
	Work from home, telework
OUTCOMES	
Health-related outcomes	Accidents at work
	Health complaints
	Physical health
	Mental health
Outcomes related to job satisfaction	Job satisfaction
	Turnover
Absence, presenteeism	Sick leave
	Cause of absence
	Working while being sick / presenteeism
Economic costs	Economic costs of accidents and absence
	Performance / productivity
Work ability	Evaluation of one's health and capacity for work

PREVENTIVE ACTION / INTERVENTIONS	
Assessments	Risk assessment
	Recording/registration of attendance, accidents and illness
	Investigation into causes of accidents etc.

Measures	Directed at:
	  o reducing psychosocial risks
	  o improving autonomy, control and organisational resources
	  o improving coping capacity, providing information & training
	  o return to work
	  o drivers/barriers for taking measures

Evaluation	Use of policies/facilities
	Effectiveness of measures
	Process evaluation of implementing measures
Participation of employees	Risk assessment
	Development & implementation of a plan of action

7. Conclusions and way forward

In this chapter an indicator model has been presented that meets several important criteria: it (1) considers exposure, outcome and preventive action, (2) is cyclic in nature, and (3) distinguishes three levels of impact (employee, employer/organisation, and larger level of impact: sectoral/national/EU). Next to these more content-related criteria, context-related criteria were formulated as well which were related to: (1) the need to consider policy relevance next to 'scientific' relevance, (2) data availability, and (3) comparability considered from a multinational perspective.

There appear to be sensitive data available. The main statistical data base is the European Working Conditions Survey (EWCS) by the European Foundation for the Improvement of Living & Working Conditions. These data allow trend analyses to some extent since 1990 and the data allow subgroup comparisons by e.g. gender, country and sector (as well as several other characteristics). However, data are measured at the employee level and the survey mainly covers exposure and outcome indictors but not action indicators. Another 6th Framework project called 'Meadow' considers indicators on 'organisational change' as its main focus (http://www.meadow-project.eu/). This project as well as two large reviews on (national) surveys considering psychosocial issues (Dollard et al., 2007; Weiler, 2007) support the same conclusion: there is a major lack of coverage on preventive action.

The outcomes of this research indicated that researchers and stakeholders did not differ in their prioritisation of indicators. When stakeholders and researchers appear to be unable to prioritise indicators, model wise priorities should play an important role. Psychosocial risk management and preventive action thus far have been a neglected aspect of monitoring and have been missing in the indicators defined thus far. The difference between exposure and outcome measures on consecutive measurements could be considered as indicative of risk management, but does not necessarily relate to effective risk management. It is considered important that indicators of that type should be further developed.

The main conclusion of this project is that actions are needed to improve monitoring of psychosocial risk management at different measurement levels. A promising initiative comes from the European Agency for Occupational Safety and Health at Work and focuses on monitoring of psychosocial risk management at EU-level collecting relevant data at the employer (establishment) level. The data to be collected may further support the development of indicators and their operationalisation and, in doing so, facilitate psychosocial risk management at the enterprise and policy levels across the EU.

Having presented the indicator model developed on the basis of the PRIMA framework, the next chapters will start exploring in more detail different important aspects of the framework. Chapter 3 presents a review of standards of relevance to psychosocial risks and their management.

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