European Agency for Safety and Health at Work

Worker participation in the prevention of musculoskeletal risks at work

Executive Summary

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Executive summary

Introduction

The negative impact of work-related musculoskeletal disorders (MSDs) on the health of workers and on the productivity and costs of business is significant. It is essential to tackle MSDs. Workers need to participate in an effective way to address this major burden. They are key to identifying MSD risk factors and the prevention solutions that will work in practice. Managers do not have the solutions to all health and safety problems. Workers who do the tasks and their representatives have the detailed knowledge and experience of how the job is done and how it affects them.

This report offers insights into how workers themselves can contribute to identifying hazards and developing meaningful solutions. The report presents 22 of the most appropriate participatory methods to prevent MSDs based on evidence. Participatory methods are activities that enable workers to play an active and influential part in decisions that affect their jobs. It includes 48 short examples and 9 more in-depth case studies from workplaces on the use of worker participation in preventing MSDs. It provides an analysis and discussion of the success factors and guiding principles for worker participation, and includes policy pointers and good practice tips for micro and small enterprises (MSEs).

The examples cover the most important employment sectors in the EU, with a few additions from overseas countries. They also cover a variety of company sizes and different worker groups, such as men and women and skilled and unskilled workers.

In the report, participation refers to the participation of those who perform work activities, using a problem-solving approach to reduce risk factors. Participation covers, in principle, all levels of hierarchy who may have first-hand experience about the specific problem. It may include both direct worker participation and worker representatives. ([1]) ([2])

Methodology and classification of worker participation approaches in MSD prevention

The information that follows is based on international scientific literature found on worker participation in MSD prevention, complemented with additional material on the internet, researcher networks and EU-OSHA focal points.

Workplace MSD prevention interventions should progress through a series of steps or phases. Ideally, workers should participate in each phase:

- Assess risks to identify issues that need to be addressed.
- Generate solutions to identify and develop possible solutions.
- Implement solutions that cover the practical application of the solution.
- Perform evaluations to inform whether solutions are working.
- Integrate into operations to secure the sustainability of the solutions.

The report categorises the methods and examples based on the phases they are used in, and whether worker participation is used in all the phases (holistic and whole-system approaches), some (multi-phase methods), or only one (single-phase measures).

([1]) Kuorinka, I. (1997). Tools and means of implementing participatory ergonomics. *International Journal of Industrial Ergonomics*, *19*(4), 267–270. https://doi.org/10.1016/S0169-8141(96)00035-2

([2]) van Eerd, D., Cole, D., Irvin, E., Mahood, Q., Keown, K., Theberge, N., Cullen, K. (2010). Process and implementation of participatory ergonomic interventions: A systematic review. Ergonomics, 53(10), 1153–1166. https://doi.org/10.1080/00140139.2010.513452

Choosing a participatory method

Table 1 presents an overview of the methods included in the report.

Whole-system approaches are the most comprehensive, but usually require more resources and professional assistance to apply them. In some cases, it can be easier to adapt the methods to the specific context by combining a series of single-phase or multi-phase tools. This makes the process simpler, but will require more planning. For example, dialogue meetings or forum groups can be the basic method for most of the worker participation across the whole process to solve a relatively simple MSD problem, such as introducing basic lifting aids (a hoist or a lift). Assessing the risks and generating solutions can take place at dialogue meetings with workers, where responsibility for implementing the selected solution is delegated. A new dialogue meeting can then be used to evaluate and (later) discuss how to integrate into operations.

Dialogue meetings also are an example of a method that can easily be applied to MSEs, while many other methods need considerable adaptation and/or external professional assistance to use in MSEs. Some methods have been used in broader occupational health and safety (OSH) issues and do not particularly target MSDs, but can easily be focused on MSD prevention. Other methods are drawn from fields such as lean manufacturing (kaizen and 5S) or OSH management systems (audits). By involving workers in their application, they can be used for MSD prevention. These methods have the advantage of already being applied in operations, making them potentially easier to integrate.

Table 1 Overview of methods

Holistic and whole-system approaches	Multi-phase methods	Single-phase tools
• The Healthy Workplace Participatory Programme • ErgoPar • SOBANE • Participatory Macro-ergonomic Work Analysis and Design	• Focus groups with workers • Democratic dialogue • Photo safari/photo voice and work debate space • Future workshop • Dialogue meetings and group discussions • Toolbox talks • Training in risk assessment and solutions generation • Goldilocks work principle • 5s and kaizen	• Root cause analysis • Body mapping, hazard mapping • Observation checklists and Rapid Upper Limb Assessment (RULA) • Self-confrontation video • Simulation • Involving workers in workstation redesign • Ambassadors and champions • Engaging workers in testing solutions • Participatory internal audits

Worker participation case studies

Nine cases were analysed, covering similarities and differences and focusing on what works in different circumstances. This was done to identify conditions and actions that are important for successful worker participation in MSD prevention. The nine cases are as follows:

- **Reorganisation of a carpentry workshop** in a regional authority resulted in reduced MSD risks, more efficient operations and more engaged workers. The intervention used a holistic participatory method and a future workshop and simulation.
- **Intervention in a kindergarten** resulted in a reduction of MSD risks and more balanced physical activities. Key elements of the approach were the workers prioritising the most important child-caring tasks and focusing on integration of solutions with these tasks.

- **Kitchen work** was analysed using a series of participatory workshops. The workers used visits to other kitchens to find inspiration for identifying MSD risks and possible improvements.
- **An agri-food company** organised a systematic four-year participatory process to prevent MSDs. Support from OSH professionals and management commitment at all levels formed the basis for both tangible improvements and the institutionalisation of a participatory preventive policy.
- **A PVC factory** involved workers in developing and testing trolleys to reduce MSD risk from heavy manual handling. It involved collaborative work teams, and different options for adaptations to equipment were considered, tried and adjusted in a gradual process. The management used the successful experience to continue with more worker participation activities.
- **Hotel cleaning, linen and catering staff** participated in an MSD risk reduction project. Supported by a regional OSH organisation, the hotel trained volunteers as prevention coordinators who then used observation and discussion with co-workers to find practical solutions to problematic activities.
- **Pruning grapevines** constituted a risk for MSDs at a vineyard. Management and workers worked systematically to develop less hazardous work methods. They received support from an OSH professional to use video to document and analyse work methods before and after changes. Worker verification of the video assessments was a key feature.
- **Maintenance workers:** a manufacturer used video as a point of departure for workers to analyse and improve their work. Improvements were later tested with operations workers to control MSD risks of their work tasks, as well.
- **A boiler manufacturer** used focus groups for workers and a fault tree analysis to identify the causes of MSDs. The workers then became involved in identifying and implementing improvements.

Conditions, actions and principles important for success

The report identified various conditions, mechanisms and actions that are key to facilitating successful worker participation in MSD prevention. These are similar to those identified for other OSH risks. They include the following:

Alignment between core work operations and changes to prevent risks

The closer the improvements get to the daily operations, the greater the possibility for success, especially for the sustainability of changes. Integration can be strengthened by using workers' needs as the starting point. It can also be reinforced by having workers involved in both risk assessment and in testing and evaluation to ensure that the changes made are adapted to daily operations and adopted in practice.

Managerial commitment to MSD prevention and active worker participation

The active commitment of managers at all levels of MSD prevention and worker participation is essential. Management activities need to demonstrate trust by delegating responsibility to workers and participating in dialogue with them. Regarding commitment to participation, this needs to be reflected in a general workplace culture of open communication where workers are listened to and their concerns acted upon, where there are processes to make this happen and where mangers actively engage with their workforce. If managers do not actively facilitate participation, for example, in organisations with a top-down, command-control culture where management decides everything on their own, worker trust in management's intentions regarding their participation in an MSD prevention activity will be low, and engagement is likely to be limited. On the contrary, organisations that already have a general approach to engaging workers in change processes and decision-making will see the greatest benefits of worker participation in an MSD intervention.

Worker participation in all phases of intervention

For worker participation in MSD prevention to be effective, it cannot be limited to a single activity, such as hazard spotting as part of assessing risks or generating solutions. A proposed improvement to an identified risk only helps if it is implemented in practice, tested, refined and integrated in daily operations. Therefore, the participatory efforts need to consider the full risk management cycle where all phases must be accomplished to secure a successful result, including monitoring and evaluating implemented solutions.

Clear distribution of roles and responsibilities

Too often, managers are occupied with running the core operations, and workers do not believe that they have the necessary authority to take action. A clear distribution of responsibility is therefore crucial for the outcome of any worker participation initiative, and the roles of all parties need to be clear. In many cases, with the right support and training, workers have the capacity and competence to take charge of a large part of the preventive efforts, sometimes indirectly through coordinators or champions. However, it must be clear how much decision-making authority they have and when management approval is needed. Furthermore, managers must not use that distribution of responsibility as an excuse to neglect their own responsibility in ensuring that decisions are taken and risks are successfully prevented in practice.

Allocation of sufficient time and budgetary resources

Resources include sufficient time and budget to carry out the process and implement the MSD prevention measures. This includes ensuring sufficient working time for workers to participate in all activities and act as coordinators or champions if these are used, as well as time and resources to provide any training or to contract outside experts.

The participating workers need sufficient time during working hours. Those with additional responsibilities, including worker representatives and coordinators, need more time. However, all workers must have the possibility to join meetings, test solutions and other relevant activities, including time for tasks, such as completing questionnaires.

Many changes require investment in adapting existing conditions or acquiring new equipment. There needs to be a commitment to making the necessary budget available for this at the start of the intervention.

Competences and external support

The necessary competences need to be available to both run the participatory process and be able to assess and select the relevant MSD preventive solutions. Training for all workers in risk assessment and MSD prevention measures are often relevant. Worker representatives and other key actors, such as champions or coordinators, may need more extensive training.

Especially for more complex problems, the assistance of an ergonomist or other OSH professional has proved to be important in supporting the start of an intervention through to the implementation of solutions that work in practice. They help to plan and initiate the process, facilitate dialogue activities, assess the viability of solutions, and can also take care of training. Larger companies often have their own OSH support. Access to external support, for example through regional accident insurance organisations, are available in some countries. Where external support is used, the activities must be tailored to and embedded in the workplace. Some external programmes featured in the report's examples ran a participatory MSD intervention with several MSEs at the same time.

Identify and include all stakeholders

Starting the participatory process in the right manner lays the foundation for strong achievements. A key point here is to involve all concerned workers and other internal stakeholders in the process. Late involvement may lead to resistance because the concerned workers may feel that their views have not been taken into consideration. This approach will also help to get the workers committed to getting involved in the whole process, ensuring that solutions are integrated into the core operations and used in practice. Furthermore, it is important to remember to involve other concerned stakeholders, for

example maintenance workers, or at the solution testing phase, workers in other parts of production that could be affected by a change, but also resource persons such as production engineers and design units. The workers directly concerned and (trade union) worker safety representatives (where present) should both be involved in a complimentary way, for example by involving safety representatives in the overall planning and steering process. They are different avenues to be combined as effectively as possible.

Room for innovation

Worker participation in MSD prevention inevitably builds on innovation. Work methods, organisation and technology need to be adapted, or completely new methods or technology may need to be introduced. An important element in worker participation is to allow space for innovation. The cases show that learning from other workplaces served as an important inspiration to get started with developing new ideas. Similarly, some methods such as future workshops and photo safaris are useful because they particularly focus on opening the mind to new thinking.

Communication

Active and efficient communication is essential throughout all phases of the process, which includes dialogues among all involved stakeholders and communications through notice boards and electronic means.

Implementation and follow-up in practice

Generating solutions does not change anything without practical implementation. The most successful cases used a stepwise approach that includes immediate actions and longer-term actions, providing tangible results that can serve as stepping stones for the actions. Improved worker participation gained through a specific MSD intervention can lead to improved worker engagement in OSH overall for the organisation going forward.

Tips for small businesses

The report indicates which methods and intervention examples could be relevant for or adapted to MSEs. While MSEs have fewer resources than larger organisations, active worker participation is probably more widespread in MSEs because of the closer social relations between owner-managers and workers who work and communicate with each other daily. However, for many MSEs initiating a participatory MSD prevention programme may be overwhelming. However, building on the daily practice of working together and holding relatively simple dialogues or workshops, the process of involving workers in MSD prevention may not be so complicated.

MSEs need to ensure that they:

- **listen to workers'** concerns related to MSDs;
- **organise meetings** to identify problems and generate solutions;
- **identify** the most important suggestions;
- **allocate responsibility** for implementation;
- **test and refine** solutions;
- **embed changes in daily operations** and check they are applied in practice;
- **seek external advice** when necessary;
- **keep workers fully informed and involved** at all stages through daily contact and other communication means.

Discussion

The methods and examples presented in this report show that there is a wide variety of ways to include worker participation in MSD prevention. The general principles for successful participation outlined above need to be tailored to the particular context, in specific decisions about who to involve, their level of involvement in different intervention phases and how to involve them.

It should be obvious to *involve all workers concerned*, but this is not always easy. There may be many workers in an establishment, including those both directly and indirectly affected by a given problem. There are also managers and professionals to involve. Therefore, engaging as many workers as possible needs to involve a combination of direct and indirect participation.

To get the process working in practice, there may be *different levels of involvement* and *influence* related to the various intervention phases. Maybe all workers will be involved in assessing risks and proposing solutions, with fewer (as representatives) involved in testing and implementing solutions. And then, again, all workers could be involved in evaluating the implemented solutions. Whatever approach is used, management must be transparent about how much influence and responsibility are allocated to the workers. Otherwise, the process may backfire if workers feel that their concerns are not treated seriously.

Finally, decisions are needed about *project organisation*. A project manager or project champion should ensure that activities are planned, executed and completed. Using a combination of a project group of workers and a joint steering group of management and workers can be effective. A participatory MSD intervention should not be treated as a one-off exercise. Part of the process should be to integrate the participatory experiences into both on-going operations and future changes to support continuous MSD prevention practices. This can be facilitated by a management strategy for involving workers and permanent structures such as OSH and cooperative committees.

Conclusion

All employers in the EU are required to consult their workers on OSH, including MSD prevention. In agreement with previous EU-OSHA reports and other authors, this report finds that going beyond passive consultation to active worker participation in all phases of an MSD intervention will lead to more successful prevention practice. It enables the real problems to be identified and the best solutions to be generated. It can be particularly helpful for finding simple, practical solutions. It also helps to strengthen worker commitment and engagement in their organisations in general. In addition, it is an approach that is good for both workers' health and for business.

The many different methods and the experience from the practical examples clearly indicate that there is not just one road to efficient worker participation. There are many different approaches. Methods and tools can be combined in various ways in the process of adapting to the particular workplace context. Factors such as sector and workforce composition (gender, skilled or unskilled, ethnicity and others) are all important in fitting the particular participatory process to the workplace. In particular, for MSEs, approaches need to be adapted to their particular context of limited resources in the form of management and time.

In summary, the key success factors include the following:

- Management commitment at all levels and active engagement.
- Adequate time and resources.
- Training in MSDs/ergonomics, risk assessment and prevention, and participatory methods.
- Workers *actively* involved in all stages of the intervention, from planning to evaluation, and including all relevant stakeholders.
- Effective communication.
- Embed improved participation from one intervention into continuing MSD management.

Policy pointers

The report proposes the following policy pointers to improve active worker participation in MSD prevention.

Further developing rules and guidelines for worker participation

It would be beneficial for authorities and social partners to agree on rules and guidelines for active worker participation that go beyond formal consultation. This includes guidance on how to involve vulnerable groups, such as migrant and gig economy workers, and women as well as men. This should be combined with awareness-raising about the importance of active worker participation.

Creating support systems

Professional support is important, and sometimes a prerequisite for a successful participatory MSD intervention adapted to the national and sector context. Expanding professional support with a focus on assistance to develop participatory competences in companies would therefore be important for more effective worker participation.

Training in participation

Introductory training in participatory methods is important, and its availability needs to be expanded in many countries and sectors. OSH professionals need competence in how to involve workers. Managers and workers need training in their roles and MSD hazards and prevention. Labour inspectors would benefit from inspection guidelines and training on worker engagement so that they can advise enterprises during their inspections.

Intermediaries to support the special needs of MSEs

MSEs need support to carry out participatory processes, which is most efficiently provided through sector-specific intermediaries. Practical support for interventions, for example provision of training or steering and intervention, and economic support are relevant because MSEs generally do not have the resources to pay for market-based OSH consultancies. An effective way can be to run an intervention with several MSEs from a sector at the same time. This will allow MSEs to learn from each other.

Funding

EU transnational funding schemes could be used to develop and transfer programmes and initiatives on worker involvement between Member States. Additional national and EU funding would be a valuable asset for progress in worker participation.

Further research and sharing good practice

Further research is needed concerning the prerequisites for effective worker representation and participation, effective methods for MSEs to be able to apply themselves, and how worker consultation and involvement could be achieved in new types of work, for example the gig economy and among vulnerable worker groups. Any existing good practices need to be shared between organisations and between Member States.

The European Agency for Safety and Health at Work (EU-OSHA) contributes to making Europe a safer, healthier and more productive place to work. The Agency researches, develops, and distributes reliable, balanced, and impartial safety and health information and organises pan-European awareness raising campaigns. Set up by the European Union in 1994 and based in Bilbao, Spain, the Agency brings together representatives from the European Commission, Member State governments, employers' and workers' organisations, as well as leading experts in each of the EU Member States and beyond.

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