Työterveyslaitos

Työsuojelurahasto

SujuKE – Improving work flow through cognitive ergonomics. An intervention study

Research brief

Dear Recipient,

We would like to invite you to take part in our study: *SujuKE – Improving work flow through cognitive ergonomics. An intervention study*.

The SujuKE study is about the cognitive ergonomics of work, that is, adapting work so that it suitably strains the brain, and so that the demands and conditions of work are in harmony with human information processing capabilities and limitations.

The aim of the SujuKE study is to improve the conditions of brainwork, the flow of work and well-being at work. During the SujuKE project, we will implement measures at the workplace that aim to facilitate work and reduce strain. The objective of the project is to obtain research evidence of the effects of these measures on working conditions, the flow of work, well-being at work, and the productivity of work. The study is carried out by the Finnish Institute of Occupational Health (FIOH) and funded by the Finnish Work Environment Fund.

A personal data file description has been created for the study, which is available on the project's website: www.ttl.fi/sujuke.

Participation in the SujuKE study

We will invite all the units or groups that your organization has enrolled to take part in the study.

It is important for the success of the study that you participate in as many as possible of the parts that you are invited to. You will be invited to do one or several of the following:

a. answer electronic study questionnaires,
b. take part in a cognitive ergonomics survey during a one-to-one meeting and sign an informed consent form,
c. take part in workshops as part of workplace development or as part of the study, for which you will be asked to sign an informed consent form,
d. take part in a study intervention that involves trying out study-related work experiments in your own work,
e. answer study intervention task questionnaires,
f. take part in evaluation workshops and sign an informed consent form.

Your participation in the study will be during working hours. Participants will not be paid for their participation. Participation is voluntary and you have the right to withdraw your consent to the study without giving a reason, after which your information will no longer be used in the study. Withdrawing your consent will in no way affect how you are treated now or in the future.

Benefits of the study

This study will provide us with valuable information, on the basis of which we can improve the flow of work and employee well-being, and through this, the productivity of work. The study will work on concrete methods to help improve cognitive ergonomics, and good practices for managing strain will be realized and implemented at your workplace. In this way, all study participants will benefit from the success of the study.

- By participating, you will improve the reliability of results, which means that they will help us justify how work flow and well-being at work can be improved in your unit.
- By answering the study questionnaires, you can make your opinion heard, and obtain information on your own situation if you want to (your own results: indices for the prevalence, motivation and strain of brainwork).
- By taking part in the interviews, you will be able to personally discuss strain and the factors that hinder and promote the flow of your own work.
- By participating in the workshops, you will be able to influence the measures with which work strain can be reduced.
- By taking part in the study intervention tasks and answering the questionnaires, you will receive concrete support for improving the cognitive ergonomics of your own work and managing your own strain.

The study will not cause any physical, mental or practical harm to participants.

Phases of the SujuKE study in more detail

The study is made up of five parts, which will overlap over a period of about 3–4 months (in addition to follow-up questionnaires over a longer time period).

1. Study questionnaires
2. Cognitive ergonomics survey
3. Workshops
4. Measures, i.e. study intervention
5. Follow-up and evaluation

We will invite all the employees from the participating units to Part 1 and Parts 3–5. We will further invite some employees to Part 2. The members of the control groups will only be invited to Part 1 (study questionnaires). The workshops (Part 3) are part of the

development of the workplace operations, and to these we will invite all the employees of the unit, even if they are not participants of the study.

1. Study questionnaires

The study questionnaires will be carried out at the beginning of the study, during the study intervention, after the intervention, during the four-month follow-up, and during the 10-month follow-up. The questionnaires contain the following sections: background information on the respondent, working conditions and cognitive strain factors of work, work flow, well-being at work, and the productivity of work. The questionnaire will be carried out in three organizations and altogether 1000–1500 people will be invited to respond. Answering each questionnaire will take about half an hour, 45 minutes at the most.

2. Cognitive ergonomics survey

The cognitive ergonomics survey will consist of a personal interview and observations of work during tasks. The aim is to determine unnecessary strain factors, and the factors that hinder and promote the flow of work. The survey will focus on the work, and not the workers. We will invite to the survey some of the employees that expressed an interest in this in their study questionnaire responses, about 50–80 people. The participants will be chosen to represent different units, job types, work roles and working conditions. The survey will take about two hours per participant.

3. Workshops

The workshops are part of the workplaces' operations development, and we will invite all the unit's employees, supervisors and key persons to attend them. We will present the main results of the questionnaire and the surveys in these workshops, as well as good solutions for improving cognitive ergonomics and managing strain. On the basis of these solutions, together we will develop concrete working methods. If participants agree, we will record and store certain parts of the workshops for research purposes. We will arrange several workshops and each will have about 20–60 participants, altogether 600–1000 people. The workshops will last about three hours and can also be held as two 1.5-hour sessions.

4. Study intervention

The intervention itself will be carried out in such a way that the implementation of the new working methods will be supported by study task questionnaires. You will be reminded of the new ways in which to carry out your work and asked to put them into practice. Two to three times a week, you will receive a task questionnaire, which contains an information briefing section and questions regarding your opinion and experiences. All the employees of the organization's participating units will be invited to answer the study task questionnaires, 1000–1200 people in total. Each of the 10 study intervention questionnaires will take about 5–10 minutes to fill in, which is altogether 20–30 minutes a week, for a period of 4–5 weeks.

5. Follow-up and evaluation

The intervention, i.e. the new working methods and their effects, will be followed up through study questionnaires, as presented in Section 1: Study questionnaires. Follow-up will also include evaluation workshops, in which we will determine the success and results of the project. Separately agreed parts of the evaluation workshops will be recorded and stored for research purposes. Supervisors, key persons and some of the employees who participated in the study will be invited to these evaluation workshops. We will arrange several of these workshops and each will have 20–60 participants, 200–500 people in total. The workshops will last two hours.

Confidentiality of the study

The information obtained in the study is confidential. The questionnaires are in the form of a secure Webropol application. The results will be handled in such a way that the study participants' names, as well as other information that may enable identification, will not be revealed, and the data will be condensed so that individual participants cannot be identified. Identification information will be removed from the data during the analysis phase when all the data have been gathered. The identification data and consent forms will be stored in separate files.

The only people who will be able to access to the research data are those research group individuals who have been *granted* access. Part of the data gathering (partly the cognitive ergonomics surveys, workshops) will be bought as a service from external providers. These will be (occupational health) psychologists trained in FIOH's *Aivotyö toimivaksi* ("making brainwork more effective") method, who work in your organization's occupational health services. The psychologists who participate in the data gathering are bound by a duty of confidentiality, as well as by the occupational health service professionals' code of conduct, and they will sign an agreement regarding adherence to data protection.

FIOH will not communicate any individual answers to the respondents' workplaces or employers. The data obtained during the study will be stored in locked premises and locked cabinets, in a building that has controlled access. The research data will be stored permanently. Organization-specific results are confidential and will be handled in organization-specific reports, workshops and evaluation workshops. The general results of the study are public. These results will be reported in scientific and other events and publications.

For further information on the study, please contact:

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