Protocol for **Work-related interventions for people on long-term sick leave**

Protocol established:	January-March 2020 (in Norwegian (1))
Translated:	December 2020 (English)

The Norwegian Institute of Public Health (NIPH) was commissioned by the Norwegian Labour and Welfare Administration (NAV) to conduct a systematic review on the effect of work-related interventions for people on long-term sick leave and people at risk for long-term sick leave.

Description

In the present *Letter of Intent regarding a more inclusive working life* ("IA agreement"), the two main objectives are to reduce sick leave and to reduce withdrawal from work life. The latter relates particularly to people on long-term sick leave who might not return to work. To this group the Labour and Welfare service (NAV) and the health services offer various occupational rehabilitation interventions, however, the effects of these interventions remains uncertain. NAV commissioned the Norwegian Institute of Public Health to carry out a systematic review about the studies of effect of work-related interventions among people on long-term sick leave or at risk for long-term sick leave. We will primarily look at effects on return to work on short and long term, secondarily at effects on self-efficacy, disease symptoms, function and cost-effectiveness.

Project category	
Product:	Systematic review
Thematic area:	Work and welfare
Commissioner:	Norwegian Labour and Welfare Administration (NAV)
Project management and participants	
Project leader:	Alexander Tingulstad
Responsible for the project:	Rigmor C. Berg
Internal project participants:	Line Holtet Evensen, Maria Bjerk, Jose F. Meneses-Echavez, Hilde H. Holte, Gyri Hval
Internal peer review:	Hege Kornør, Jan Peter William Himmels
External peer review:	Hege Randi Eriksen (Western Norway University of Applied Sciences), Chris Jensen (Nasjonal kompetansetjeneste for arbeidsrettet rehabilitering)
Expert group:	Gunn Hege Marchand (The Norwegian University of Science and Technology, NTNU), Randi Wågø Aas (Oslo Metropolitan University, University of Stavanger)
Plan for replacement if project participants drop out:	The leaders will find replacements

Aim

This systematic review aims to identify, assess and summarize available research about the effects of work-related interventions for people on long-term sick leave and those at risk of long-term sick leave. Findings from this review will contribute to evidence-informed policy making for the welfare services.

Background

Long-term sick leave is a serious concern in developed countries, including Norway (2). The last years, national measures have been implemented to reach a more inclusive working life. The aim of these measures is to prevent sick leave and to reduce the falling out from working life. A report from 2018 found that there is still a lack of knowledge regarding the effects of interventions that is supposed to reduce sick leave (3). The authors reported that the work-related rehabilitation interventions assessed in Norway have shown varied results (3).

Sick leave in Norway

The total season-adjusted sick leave was 5.9 percent in the third quarter in 2019 (4). The last years the proportion of sick leave has been relatively stable around 6 percent (4). There has been additional focus the previous years to prevent sick leave in areas such as hospitals, nursing homes, kinder gardens, oil industry, public transports, and entrepreneur industries (4).

Divided on gender, the total sick leave for men were 4.5 percent and for women 7.5 percent, which is similar to other countries (4). There is a tendency to shorter periods of sick leave for men, while the women are prone to long term sick leave. Previous research has debated the complex relationship between traditional types of occupation for women, responsibility for the family and at home might influence sick leave (5).

Musculoskeletal disorders were the most common reason for sick leave with 33 percent of all sick notes in the third quarter of 2019 (4). Common mental disorders came second with 17 percent. However, research has shown that the lines between these diagnoses are thin, and that common mental disorders are underreported, and often disguised as a musculoskeletal diagnosis (4). Respiratory diseases are placed as the third most common cause of sick-leave with 13 percent.

Most sick leave episodes were short, 60 percent lasted 16 days or shorter. A total of 80 percent was shorter than 8 weeks, while 20 percent of the periods was for more than 8 weeks, and 8 percent lasted 6 months or more (4). After 12 months, the rights to sick pay reaches it limit, and those still on sick leave must apply for other disability benefits. Statistics from NAV show that the probability of returning to work is highest during the first weeks, thereafter the probability decreases significantly, before it increases again from 9 months to the end of the sick leave period of 12 months (6).

Context in Norway

All legal residents in Norway are included in the national insurance scheme and have the right to 100% paid sick leave for up to 12 months. The first 16 calendar days are paid by the employer, before the government (NAV) pays the remaining period. The sick pay corresponds to the full wage, up to a certain limit. After one year, the worker must either return to work or apply for other welfare benefits (e.g., disability pension).

In comparison to other similar countries, Norway has a higher proportion of people on sick leave. This might be influenced by several factors, such as high work participation and good sick leave arrangements (7, 8). These factors vary in other countries, with regards to length of benefits, percentage of salary covered by the benefits, the possibility of losing job while on sick

leave and low work participation (7-10). Hence, comparison of somewhat similar countries might be challenging in the area of work and welfare.

Work-related rehabilitation

These interventions should accompany the employer to facilitate return to work after sick leave or help people at risk of sick leave stay at work. In Norway, work-related interventions can be a collaboration between NAV and the health services as well as the employer, regardless of being public or private.

The aim of work-related rehabilitation is to strengthen the work-ability, emphasize work self-efficacy, and to overcome obstacles for work participation (10). The interventions vary, and may be intensive with shorter or longer stays at rehabilitation centers, or relevant treatment and education. If appropriate, the interventions can be intensive with either shorter or longer stays at rehabilitation centers, or relevant treatment and education. Those might include group or individual follow-up, physiotherapy, physical exercise, stress-coping, vocational guidance, and cooperation with employers.

There are uncertainty and partly disagreements among experts regarding the effect on return to work of such interventions (3). A systematic review assessing the effects of work-related rehabilitation for people on sick leave might contribute to a consensus among policy-makers and experts in the field.

Methods

We plan to conduct a systematic review of primary research according to the NIPHs established methodological handbook (11). In cooperation with the NAV, we have decided not to conduct an umbrella review, as to the lack of details regarding the interventions and the populations will limit the use of the results. Besides including primary studies, we will include systematic reviews of high quality. Summaries from those reviews will be listed in the final report. Potential adjustments to the protocol during the project will be discussed with NAV.

a) Search strategy

We will search in the following databases:

- Campbell Collaboration (Subject area: Social Welfare)
- Cochrane Database of Systematic Reviews
- Epistemonikos (Broad Synthesis & Systematic Reviews)
- Cochrane Central Register of Controlled Trials
- Embase
- MEDLINE
- PsycINFO
- Scopus

- Sociological Abstracts (incl. Social Services Abstracts)
- SveMed+

A research librarian will develop a search strategy in cooperation with the project leader; the search and strategy will be peer reviewed by another information specialist. The research librarian will run the searches. The final strategy will be published as appendix in the final report.
We will also search grey literature in search engines like Google Scholar and web pages of relevant Scandinavian institutions. Additionally, reference lists will be inspected by one reviewer.

b) Inclusion and exclusion criteria

The following questions are to be answered: What are the effects of work-related rehabilitation for people on long-term sick leave and those who are at risk of becoming long-term sick leaved? The following inclusion criteria are developed in cooperation with NAV.

Inclusion criteria	
Population	- 1) Employees with partial or full sick leave for a period of time of 1-24 months, OR Employees that are at risk of long-term sick leave (less than 30% of the population OR People that are not employed are included if less than 30% of the population AND - 2) Are on long term sick leave (1-24 months) due to any diagnosis
Intervention	- Health intervention with the aim of return to work, meaning it includes one or more components aimed at work, OR - Work-related interventions with an active health component - If a work-related intervention combines a health component and a non-health component, the study is included if the work-related intervention with a health component accounts for >70 % of the intervention.
Comparison	- Usual care, other or no intervention
Outcome	– 1) Primary outcome: full or partial return to work, time until return to work, time at work before new period of sick leave – 2) Secondary outcomes: self-efficacy, work motivation, symptom reduction, physical/social/cognitive function, cost-effectiveness
Study design	- Primary studies with the following study design: randomized controlled trials (RCT), non-randomized controlled trials and controlled studies. If we identify several high quality RCTs, we will possibly only include RCTs. - In addition, we will include systematic reviews of high methodological quality. Methodological quality will be assessed with checklists.
Context	- If we identify a high number of studies, we may limit inclusion to studies conducted in countries deemed as generalizable to Norway.

Language	-	We will include studies in languages that project participants or close colleagues master, such as English, German, Spanish, Portuguese, Italian, French, Finnish, Danish, Swedish and Norwegian.

Year	-	Primary studies published in 2000 and later - Systematic reviews published in 2010 or later

Exclusion criteria		
Population	-	People with psychotic disorders
Intervention	-	Individual Placement and Support or Supported Employment - Interventions at the workplace, without a health component - Health intervention, without any work-related components - Interventions with only preventive components, >30% of the participants are not on sick leave, only at risk
Study design	-	Uncontrolled studies, non-systematic reviews/narrative reviews, qualitative studies, non-empirical studies, cohort studies and observational studies

c) Study selection

The identified references will be imported to EndNote. We will use EPPI-Reviewer to select relevant studies. Two researchers will independently select relevant references based on title and abstract. Included studies will be assessed in full text by two independently researchers and included if relevant. All disagreements will be solved by discussion or, if needed, by involving a third reviewer.

d) Assessment of risk of bias/study quality

Two independent reviewers will appraise the systematic reviews by using NIPHs checklist based on the EPOC Checklist for Refereeing Protocols for Reviews or Amstar-2 for the assessment of methodological quality of systematic reviews (11, 12). Disagreements will be solved by discussion or by involvement of a third researcher.

If we include many high quality RCTs, we will consider to only include RCTs. To assess the methodical quality, we will use check lists. For RCTs, we will use Cochranes Risk of Bias tool (13). For non-RCTs, we will use Cochranes *Effective Practice and Organisation of Care* (EPOC) checklist (14). Two independent researchers will appraise all studies, and disagreements will be solved by discussion or by involvement of a third researcher.

e) Data extraction and analysis

Data extraction

One researcher will extract data from the included primary studies and another researcher will check the extracted data for correctness. Disagreements will be solved by discussion, or involvement by a third researcher. We will extract the following data: author, year, study aim, title, purpose, number of participants, details regarding the population, context, intervention, comparisons, results, follow-up period, and attrition. For the outcome cost-effectiveness, we will not do our own analyses, but present the results narratively supported by tables. Completeness of reporting of the work-related interventions will be evaluated and reported in accordance to the Template for Intervention Description and Replication (TIDieR) checklist (15). Regarding the systematic reviews of high-quality, we will only report the abstract, PICO, and main results.

Data synthesis

In this systematic review we will either synthesize the results statistically or narratively.
In a statistical analysis, we will analyze dichotomous outcome measures by calculating the relative risk (RR) and the 95% confidence interval (CI). We will analyze continuous outcomes using the mean difference (MD) with 95% CI, or standardized mean difference (SMD), if the outcome measures have different units or scales of measurements. We will perform meta-analyses if primary studies have the same outcomes and are sufficiently similar in terms of population, intervention, comparison, and effect measurement, using random effects models (16). Whether the studies and PICO are similar enough will be assessed when the data are available. We might expect that the interventions have different effects in different contexts and populations, and we therefore aim to find a mean effect. We will use RevMan 2014 software to generate forest plots to display measurement results.

We will initially inspect graphs visually to investigate the possibility of statistical heterogeneity and then we will investigate heterogeneity between studies by considering the I^2 statistic alongside the Chi^2 P value (16). We will consider values of $P < 0.1$ to be indicative of significant heterogeneity. We will interpret an I^2 estimate greater than or equal to 50% and accompanied by a statistically significant Chi^2 statistic as evidence of substantial heterogeneity (Cochrane Handbook for Systematic Reviews of Interventions). If substantial heterogeneity is found in the primary outcome, we will explore reasons for heterogeneity. Thus, we will consider conducting sub group analyses on different populations and interventions in meta-analyses. Based on both sick-leave statistics and previous research, the potential aspects of interest are:

- Population (work category (4, 17), socio-economic status (18-21), gender (4, 5, 22), age (4, 17))
- Diagnoses (4)
- Time on sick leave at baseline (4, 6)

- Different types of work-related interventions (3)

In case a statistical synthesis is not appropriate, we will summarize the results narratively by presenting both text and tables. If we use a narrative synthesis, we will use suitable guidance from the literature (SWiM (23)) to perform a thorough and meaningful analysis.

f) Generalizability

Findings from this review will be used by the commissioner (NAV) and other stakeholders to inform policy making in Norway. We will assess whether review findings are generalizable to Norwegian contexts.
To determine this, we will assess the following:

1. Length and coverage of sickness benefits payment
2. The possibility of losing jobs while on sick leave
3. Form of the social system (health system, work and welfare system, workplaces)

If suitable, we will include these factors the analyzes, statistical or narrative.

g) Assessment of the certainty of evidence

We will use the GRADE approach (Grading of Recommendations Assessment, Development, and Evaluation) to assess the certainty of the evidence (24). We will assess the certainty for the documentation of each of the identified outcomes (25).
We will integrate analysis of quality of evidence and the magnitude of effect of the interventions in the "Summary of findings" tables. The GRADE approach considers the risk of bias and the body of literature to rate certainty on the evidence into one of four levels:

> *High certainty*: We are very confident that the true effect lies close to that of the meta-analysis result.
> *Moderate certainty*: We are moderately confident in the meta-analysis result: The true effect is likely to be close to the meta-analysis result, but there is a possibility that it is substantially different.
> *Low certainty*: Our confidence in the meta-analysis result is limited: The true effect may be substantially different from the meta-analysis result.
> *Very low certainty*: We have very little confidence in the meta-analysis result: The true effect is likely to be substantially different from the meta-analysis result.

The GRADE asessment will be performed by two researchers, where each of them controls the others grading. If disagreements occur, a third researcher will be involved in the discussion.

h) Peer review

The protocol and final report will be assessed by the commissioner (NAV) for questions and comments. We will ensure close communication with NAV throughout the conduct of the project. The protocol and report will also be reviewed by both internal and external peer reviewers with written feedback, and at the end the products are approved by the department leaders at NIPH.

i) Reference group

The project has a reference group with experts in the field, which will be contacted if issues arise during the project. They will also review the protocol and report when needed.

Activities and schedule

Time schedule for the different assignments:

- Protocol: March 2020
- Literature search: April 2020
- Selection of studies: April-May 2020
- Data extraction and analyses: May-November 2020
- First draft to NAV: December 2020
- Complete report and peer review: January 2021
- Approved report and publication: February 2021

Publication

A report will be presented in Norwegian at the web pages of NIPH. Afterwards it might be relevant to write a scientific article to an international journal, in English or Norwegian, possibly with contribution from reviewers, reference group or NAV.

Related publications (in Norwegian) from the NIPH

Dalsbø TK, Knapstad M. Arbeidsplasstiltak får trolig flere sykmeldte tilbake på jobb. Oslo: rapport Folkehelseinstituttet; 2015.
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14. EPOC. Suggested risk of bias criteria for EPOC reviews 2017 [Available from: http://epoc.cochrane.org/sites/epoc.cochrane.org/files/public/uploads/Resources-for-authors2017/suggested_risk_of_bias_criteria_for_epoc_reviews.pdf: .
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