Nedbemanning: virkninger på arbeidsmiljø og helse

6. april 2016

Stein Knardahl

Avdeling for arbeidspsykologi og fysiologi

STAMI
STATENS ARBEIDSMILJØINSTITUTT

FORHOLD AV BETYDNING FOR UTSTØTING FRA ARBEIDSLIVET:

UTREDNING AV UTSTØTING FRA ARBEID I PETROLEUMSVIRKSOMHETEN

PÅ NORSK KONTINENTALSOKKEL MED FORSLAG TIL TILTAK.

Rapport fra partssammensatt Arbeidsgruppe

- De samarbeidende organisasjoner v/ Det norske maskinistforbund (DSO)
- Landsorganisasjonen (LO)
- Lederne
- Norsk olje og petrokjemisk fagforbund (NOPEF)
- Oljearbeidernes Fellessammenslutning (OFS)
- Norges rederiforbund
- Oljeindustriens landsforening (OLF)
- Teknologibedriftenes landsforening (TBL)

Arbeidet har vært tilrettelagt av Arbeids- og sosialdepartementet (ASD) og har vært ledet av Professor Stein Knardahl

Stein Knardahl

2. mai 2005

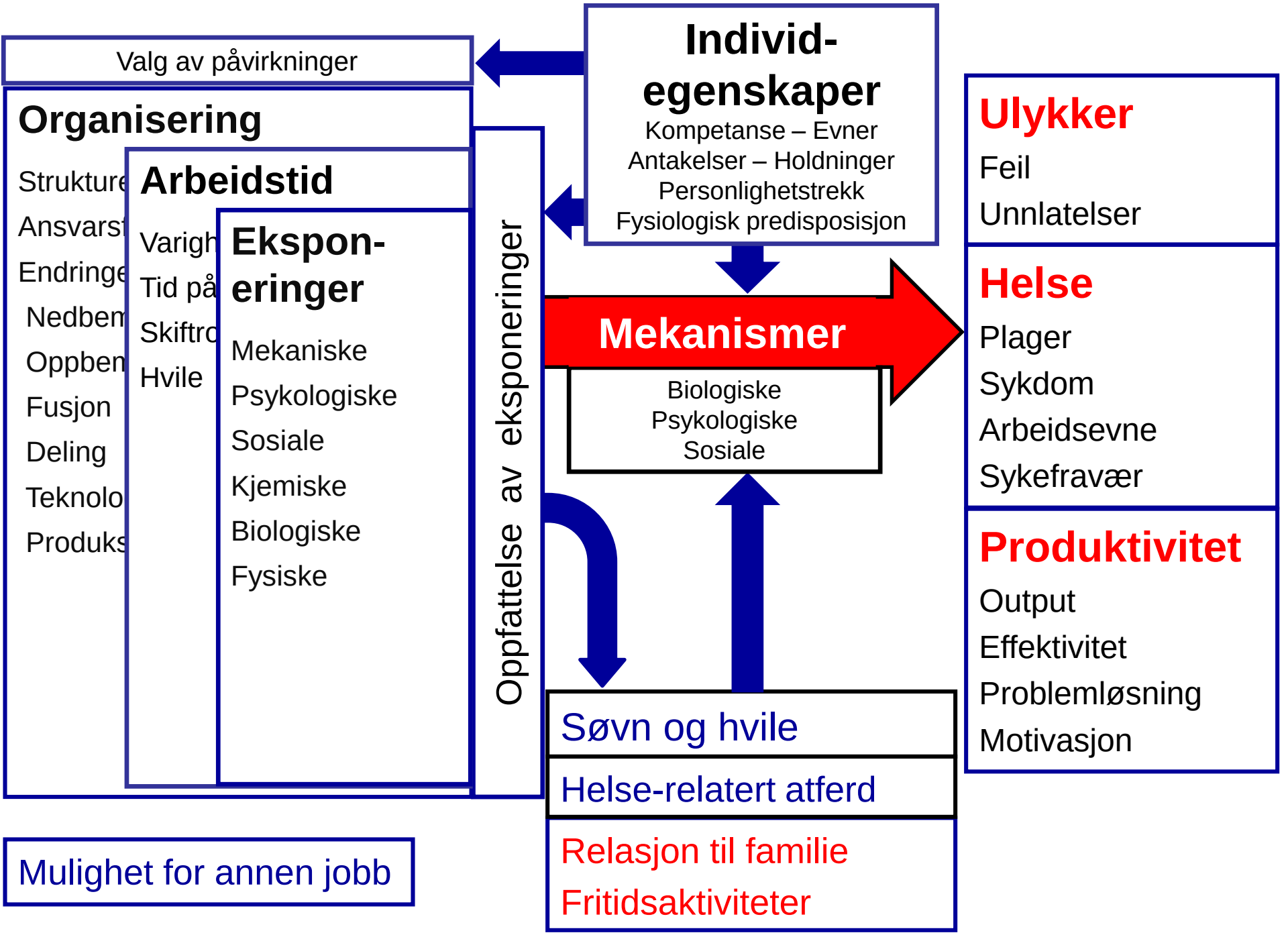
DET KONGELIGE
ARBEIDS- OG INKLUDERINGSDEPARTEMENT

St.meld. nr. 12

(2005–2006)

Helse, miljø og sikkerhet i petroleumsvirksomheten

sette inn tiltak for å forebygge utstøting og styrke om
takere som ikke lenger kan arbeide på innretningene. Tiltakene og oppfølgin-


Valg av påvirkninger
Organisering
Strukture
Ansvarst
Endringe
Nedbem
Oppben
Fusjon
Deling
Teknolo
Produks
Arbeidstid
Varigh
Tid på
Skiftro
Hvile
Ekspon-eringer
Mekaniske
Psykologiske
Sosiale
Kjemiske
Biologiske
Fysiske
Oppfattelse av eksponeringer
Individ-egenskaper
Kompetanse – Evner
Antakelser – Holdninger
Personlighetstrekk
Fysiologisk predisposisjon
Mekanismer
Biologiske
Psykologiske
Sosiale
Søvn og hvile
Helse-relatert atferd
Relasjon til familie
Fritidsaktiviteter
Ulykker
Feil
Unnlatelser
Helse
Plager
Sykdom
Arbeidsevne
Sykefravær
Produktivitet
Output
Effektivitet
Problemløsning
Motivasjon
Mulighet for annen jobb

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The impact of downsizing on remaining workers' sickness absence

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ARTICLE INFO

Article history:
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Organizational dow
Sickness absence
Fixed effects
Conditional poisson regression

Norske ansatte 2000-2003

Ingen sammenheng mellom nedbemanning og sykefravær av betydning.

ABSTRACT

sickness absence, but the overall impression is that downsizing has few if any effects on the sickness absence of the remaining employees.

Introduction

The relationship between job loss and health has long been an important issue in epidemiological and social research (see e.g. Kasl & Jones, 2000). In the last few decades, however, there has been an increased concern with downsizing as a management strategy, and with the possibility that downsizing may have serious effects not only for the 'victims' who lose their jobs, but even for the 'survivors'

sickness absence associated with large downsizing (>18% reduction in workforce), while there is a small increase (OR = 1.07) associated with moderate (8%–18%) downsizing. A smaller population study of the Stockholm area by Theorell et al. (2003) found downsizing to be associated with *lower* sickness absence in women, while a zero association was found for men. Two other large studies find evidence of downsizing effects (Røed & Fevang, 2007; Vahtera et al., 2004), but at least in the Røed & Fevang study the estimated effects

Factors underlying the effect of organisational downsizing on health of employees: longitudinal cohort study

Mika Kivimäki, Jussi Vahtera, Jaana Pentti, Jane E Ferrie

Abstract

Objective To explore the underlying mechanisms between orga
of health of e
Design Longi
assembled fro
major downsi
2); and after d
changes in wo
behaviours be
between down
were assessed
follow up was
Setting Raisio
Subjects 764
employment
Main outcom
work from all causes with medical certificate.
Results Downsizing was associated with negative changes in work, impaired support from spouse, and increased prevalence of smoking. Sickness absence rate from all causes was 2.17 (95% confidence interval 1.54 to 3.07) times higher after major downsizing than after minor downsizing. Adjustment for changes in work (for instance, physical demands, job control, and job insecurity) diminished the relation between downsizing and sickness absence by 49%. Adjustments for impaired social support or increased

Conclusions The exploration of potential mediating factors provides new information about the possible

Nedbemanning i en finsk kommune Raisio 1991-1993

Sammenlignet 3 grupper:
- <8% Ingen nedbemanning
- 8-18%
- >18% Stor nedbemanning

Ansatte ble fulgt i 4,9 år

117 % høyere risiko for sykefravær i gruppen med >18% sammenlignet med gruppen med <8%

Endringer i krav, lav kontroll og jobbusikkerhet forklarte 49%

ing (that is, reduction in numbers of staff by businesses and other organisations) became an important aspect of working life in developed countries in the last decades of the 20th century.[1] Regardless of whether downsizing is an effective business strategy resulting in better corporate performance, its potential deleterious consequences on the health of employees have become apparent.[2–4] Vahtera et al, for example, reported that the health of those who kept their jobs depended on the extent to which staffing levels were reduced in the category of job concerned.[3] Medically

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RESEARCH REPORT

Organisational downsizing as a predictor of disability pension: the 10-town prospective cohort study

Jussi Vahtera, Mika Kivimäki, Pauli Forma, Juhani Wikström, Tuomo Halmeenmäki, Anne Linna, Jaana Pentti

J Epidemiol Community Health 2005;59:238–242. doi: 10.1136/jech.2004.021824

Objective: To examine whether downsizing, the reduction of personnel in organisations, is a predictor of

Nedbemanning i 4 finske kommuner 1991-1993

Sammenlignet 3 grupper: <8% Ingen nedbemanning

8-18%

>18% Stor nedbemanning

Ansatte ble fulgt i 5 år (01 01 94 – 31 12 98)

81 % høyere risiko for uførepensjonering i grupper med >18% sammenlignet med grupper med <8%

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authors' affiliati

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Accepted for publication
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Conclusions: The immediate financial advantages of downsizing need to be considered in relation to increased occupational disability and the resulting extra costs to employers and society.

Premature occupational disability is a great burden to the person and extremely costly for society. Risk factors for disability pension include prevalent disease, low self perceived health, health risk behaviours,[1–6] demographic

high (14.6% in 1996). The number of Finnish local government personnel fell by 2.7% from 1991 to 1992, by 7.8% from 1992 to 1993, and by 2.7% from 1993 to 1994. As the granting of a disability pension may not solely be determined by illness

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Papers

Organisational downsizing, sickness absence, and mortality: 10-town prospective cohort study

Jussi Vahtera, Mika Kivimäki, Jaana Pentti, Anne Linna, Marianna Virtanen, Pekka Virtanen, Jane E Ferrie

Nedbemanning i 4 finske kommuner 1991-1993

Sammenlignet 3 grupper:
- <8% Ingen nedbemanning
- 8-18%
- >18% Stor nedbemanning

Ansatte ble fulgt i 7,5 år

100 % høyere risiko for død av hjerte-karsykdom i grupper med >18% sammenlignet med grupper med <8%

Abstract

Objective To exa
personnel in org
absence and mor
Design Prospecti
grouped into cat
in their occupatio
reduction), mino
(>18%).
Setting Four tow
Participants 590
employees, aged 19-62 years, who kept their jobs.
Main outcome measures Annual sickness absence rate based on employers' records before and after downsizing by employment contract; all cause and cause specific mortality obtained from the national mortality register.
Results Major downsizing was associated with an increase in sickness absence (P for trend <0.001) in permanent employees

vascular death among employees should increase after major downsizing. We therefore studied the association between downsizing, sickness absence, and mortality in a large cohort of permanent and temporary employees.

Methods

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Sickness and sickness absence of remaining employees in a time of economic crisis: A study among employees of municipalities in Iceland

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ABSTRACT

This article focuses on sickness and sickness absence among employees of 20 municipalities in Iceland who remained at work after the economic crisis in October 2008. The aim was to examine the impact of economic crisis on sickness and sickness absence of "survivors" working within the educational system

wake of an economic crisis, not only those who lose their jobs or work in downsized workplaces. This is important in the immediate aftermath of a crisis, but also for a significant time thereafter. This is of practical relevance for those responsible for occupational health and safety, as most Western countries periodically go through economic crises, resulting in strains on employees.

Nedbemanning i 20 islandske kommuner etter økonomikrisen oktober 2008

Økt sykefravær både i nedbemannede og ikke-nedbemannede arbeidsplasser.

Ansatte i nedbemannede arbeidsplasser var mer syke.

Økning over tid.

Omorganisering og nedbemanning: mulige konsekvenser

Jobb usikkerhet - Ansettelsesusikkerhet
Konsekvenser for helse og sykefravær
Motivasjon øker

Opplevd kontroll avtar
Opplevd forutsigbarhet avtar

Økende arbeidskrav

Rollekonflikter – prioritering av oppgaver

Konflikter – kamp for nye posisjoner

Ledelse / infrastruktur fungerer dårligere

Rykter – feilinformasjon
Fokus bort fra arbeidsoppgaver

Tap av tillit til ledelse / arbeidsgiver
Motivasjon avtar
Engasjement avtar

Offshore

Landanlegg

Har det på din arbeidsplass blitt foretatt nedbemanning eller oppsigelser det siste året?

%	2013	2015
Ja	19,3	74,0
Nei	80,7	26,0

%	2013	2015
Ja	41,4	71,3
Nei	58,6	28,7

Har du i løpet av det siste året opplevd omorganiseringer som har hatt betydning for hvordan du planlegger og/eller utfører dine arbeidsoppgaver når du er på innretningen?

%	2013	2015
Har opplevd omorganisering med stor betydning	10,3	19,4
Har opplevd omorganisering med moderat betydning	21,3	29,0
Har opplevd omorganisering uten at den har ført til endringer av betydning for mitt arbeid	20,7	25,4
Har ikke opplevd omorganisering	47,7	26,2

%	2013	2015
Har opplevd omorganisering med stor betydning	15,0	20,6
Har opplevd omorganisering med moderat betydning	23,6	29,4
Har opplevd omorganisering uten at den har ført til endringer av betydning for mitt arbeid	23,6	25,9
Har ikke opplevd omorganisering	37,8	24,1

Psykologisk og sosialt arbeidsmiljø

(1 = meget sjelden/aldri, 5 = meget ofte/alltid)

Gjennomsnitt offshore	2013	2015
Er det nødvendig å arbeide i et høyt tempo?	2,95	3,07**
Kan du selv bestemme ditt arbeidstempo?	3,63	3,56**
Kan du påvirke beslutninger som er viktige for ditt arbeid?	3,71	3,64**
Om du trenger det, kan du få støtte og hjelp i ditt arbeid fra din nærmeste leder?	3,92	3,86**
Har du så mange oppgaver at det blir vanskelig å konsentrere seg om hver enkelt oppgave?	2,44	2,50*

Gjennomsnitt land	2013	2015
Er det nødvendig å arbeide i et høyt tempo?	2,96	2,97
Kan du selv bestemme ditt arbeidstempo?	3,63	3,64
Kan du påvirke beslutninger som er viktige for ditt arbeid?	3,5	3,48
Om du trenger det, kan du få støtte og hjelp i ditt arbeid fra din nærmeste leder?	3,88	3,86
Har du så mange oppgaver at det blir vanskelig å konsentrere seg om hver enkelt oppgave?	2,63	2,59

Krav-kontroll modellen

Krav
Demands

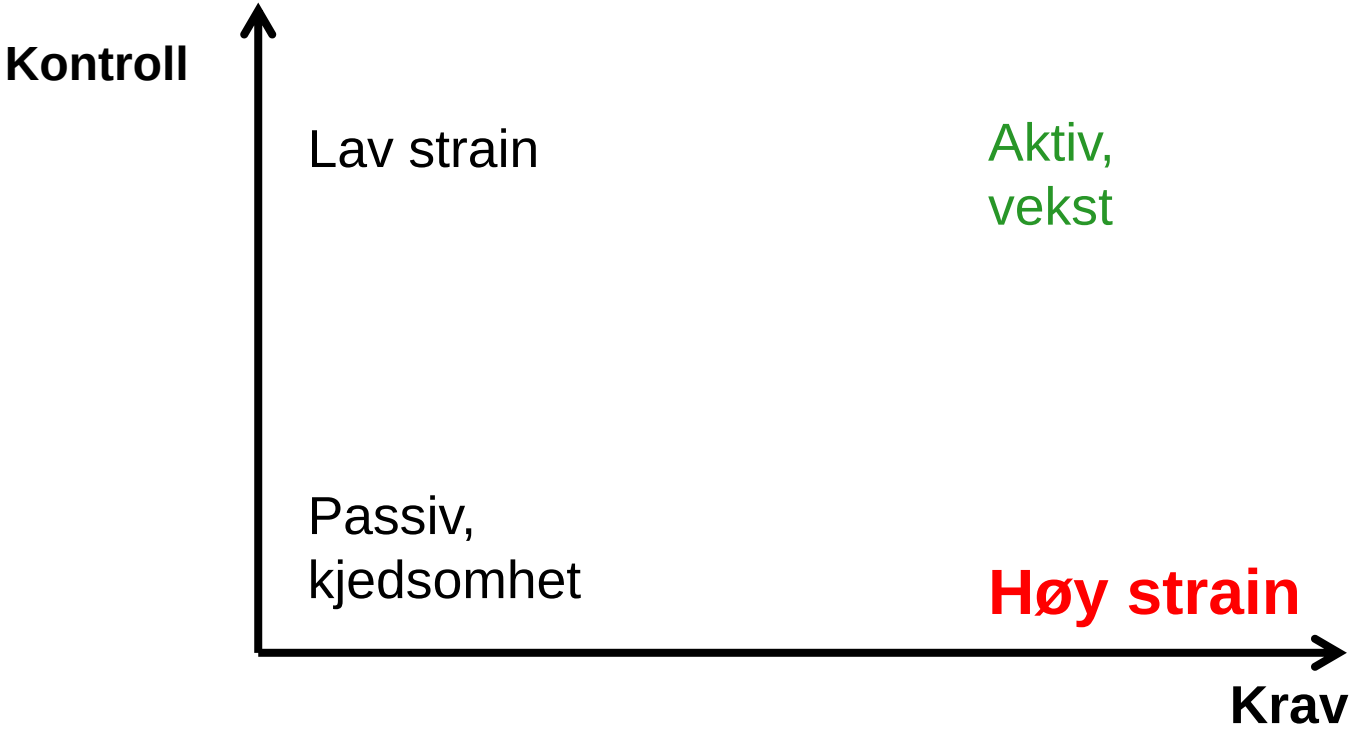
Kvantitative krav

Rollekonflikt

Kontroll
Decision latitude

Skill discretion

Decision authority



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Systematisk gjennomgang av forskning for Norges forskningsråd :

Knardahl S, Sterud T, Nielsen MB, Nordby K-C **(under trykking)**

Arbeidsplassen og sykefravær.
Arbeidsforhold av betydning for sykefravær.

Sammendrag

Forhold på arbeidsplassen av betydning for sykefravær ble belyst med kunnskapsoversikt med inklusjonskriterer for primærstudiene: sykefravær (søkeord), alle former for eksponeringer på arbeidsplassen, prospektivt eller case-control design (søkeord). Eksklusjonskriterier var studier av sykdomstilstander/diagnoser; studier av generelle tiltak.

Det var sterkeste evidens som er mulig ved observasjonsstudier, for at mekanisk eksponering generelt, repetitive bevegelser, bøying av nakke/rygg, **kombinasjonen høye krav og lav kontroll**, og trakassering/mobbing øker risiko for sykefravær. Det var sterkeste mulige evidens ved observasjonsstudier for at **kontroll**, **kontroll over arbeidstid** og positivt sosialt klima reduserer risikoen. Det var evidens for manglende sammenheng mellom krav og sykefravær.

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The contribution from psychological, social, and organizational work factors to risk of disability retirement: a systematic review with meta-analyses.

Stein Knardahl[1], Håkon A. Johannessen[2], Tom Sterud[2], Mikko Härmä[3], Reiner Rugulies[4,5,6], Jorma Seitsamo[3], Vilhelm Borg[4].

ABSTRACT

Background: Previous studies indicate that psychological, social, and organizational factors at work contribute to health, motivation, absence from work, and functional ability.

Objective: To assess the current state of knowledge of the contribution of psychological, social, and organizational factors to disability retirement by a systematic review and meta-analyses.

Methods*: Data sources*: A systematic literature search was done for studies of retirement due to disability in Medline, Embase, and PsychINFO. Reference lists of relevant articles were hand-searched for additional studies. *Data extraction*: Internal validity was assessed independently by two referees with a detailed checklist for sources of bias. Conclusions were drawn based on studies with acceptable quality. *Data synthesis*: We calculated combined effect estimates by means of averaged associations (Risk ratios) across samples, weighting observed associations by the study's sample size. Thirty-nine studies of accepted quality were found, 37 of which from the Nordic countries.

Results: There was moderate evidence for the role of **low control** (RR=1.40; 95% CI=1.21-1.61) and moderate evidence for the **combination of high demands and low control** (RR=1.45; 95% CI=0.96-2.19) as predictors of disability retirement. There were no major systematic differences in findings between the highest rated and the lowest rated studies that passed the criterion for adequate quality. Limited evidence was found for downsizing, organizational change, lack of employee development and supplementary training, repetitive work tasks, effort-reward imbalance increasing risk of disability pension and for no effect of job demands. Very limited evidemce was found for evening or night work, and low social support from ones superior.

Conclusions: Psychological and organizational factors at work contribute to disability retirement with the most robust evidence for the role of work control. We recommend the measurement of specific exposure factors in future studies.

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Omorganisering og nedbemanning: mulige konsekvenser

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Tap av tillit til ledelse / arbeidsgiver
Motivasjon avtar
Engasjement avtar

subtilis (fig. S2). The RLP of *B. subtilis* includes both those amino acid residues of RuBisCO that are responsible for binding the phosphate on C1 of RuBP and those required for activation by CO_2. However, the residues of RuBisCO that are responsible for binding the other phosphate group of RuBP and the residues of loop 6, which are essential for RuBisCO activity (*2*, *3*), are replaced by different amino acids in RLP (Fig. 1B). The reaction catalyzed by RuBisCO consists of three sequential, partial reactions: enolization, carboxylation or oxygenation, and hydrolysis (*2*, *3*, *26*). Deletion of loop 6 from RuBisCO prevents it from catalyzing the carboxylation/oxygenation reactions (*27*). However, it retains the ability to catalyze the enolization reaction (*27*). This observation supports the hypothesis that the RLP-catalyzed enolization of DK-MTP-1-P does not require the amino acid residues that bind the phosphate group on C5 of RuBP and the loop 6. Moreover, the structure of DK-MTP-1-P is very similar to that of RuBP. In photosynthetic RuBisCO, these additional structures may hinder the DK-MTP-1-P enolase reaction, and they may also explain the slow growth of *ykrW*$^-$/*rbc*L$^+$ cells (Fig. 4C). In this context, our results with the RLP of *B. subtilis* suggest that RLPs of other bacteria may also catalyze a reaction similar to one of the partial reactions of RuBisCO in a bacterial metabolic pathway.

Our analysis shows that RLP of *B. subtilis* functions as a DK-MTP-1-P enolase, which has no RuBP-carboxylation activity, in the methionine salvage pathway. Moreover, this function of RLP is conserved in the RuBisCO from a photosynthetic bacterium. In a standard phylogenetic tree of the large subunits of RuBisCO, the RLP from *B. subtilis* is not included on any branches that include RuBisCO or on branches that include other RLPs with RuBP-carboxylation activity (Fig. 1A). The codon usage and the G + C content of the gene for RLP are typical of the organism. The literature (*28*) suggests that genes such as the gene for RLP were probably not derived by lateral transfer of a gene for a RuBP-carboxylating enzyme from another unrelated organism, for example, in this case, an archaeon or photosynthetic bacterium. Thus, it is possible that the gene for RLP, which in *B. subtilis* is part of the methionine salvage pathway, and the gene for photosynthetic RuBisCO originated from a common ancestral gene (supporting online text). However, bacteria and Archaea that have RLPs first appeared on Earth (*29*) long before the Calvin cycle developed in photosynthetic bacteria (*30*), thus we suggest that RLPs may be the ancestral enzymes of photosynthetic RuBisCO.

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Supporting Online Material

www.sciencemag.org/cgi/content/full/302/5643/286/DC1
Materials and Methods
SOM Text
Figs. S1 and S2
References

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Does Rejection Hurt? An fMRI Study of Social Exclusion

Naomi I. Eisenberger,[1]* Matthew D. Lieberman,[1] Kipling D. Williams[2]

A neuroimaging study examined the neural correlates of social exclusion and tested the hypothesis that the brain bases of social pain are similar to those of physical pain. Participants were scanned while playing a virtual ball-tossing game in which they were ultimately excluded. Paralleling results from physical pain studies, the anterior cingulate cortex (ACC) was more active during exclusion than during inclusion and correlated positively with self-reported distress. Right ventral prefrontal cortex (RVPFC) was active during exclusion and correlated negatively with self-reported distress. ACC changes mediated the RVPFC-distress correlation, suggesting that RVPFC regulates the distress of social exclusion by disrupting ACC activity.

It is a basic feature of human experience to feel soothed in the presence of close others and to feel distressed when left behind. Many languages reflect this experience in the assignment of physical pain words ("hurt feelings") to describe experiences of social separation (*1*). However, the notion that the pain associated with losing someone is similar to the pain experienced upon physical injury seems more metaphorical than real. Nonetheless, evidence suggests that some of the same neural machinery recruited in the experience of physical pain may also be involved in the experience of pain associated with social separation or

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