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**Can illegitimate job tasks be reduced by a participatory  
organizational-level workplace intervention? Results of a cluster-  
randomized controlled trial in Danish pre-schools <sup>1</sup>**

by Elisabeth Framke, PhD,<sup>2</sup> Ole Henning Sørensen, PhD, Jacob Pedersen, PhD, Reiner  
Rugulies, PhD

*1 Electronic Appendix*

*2 Correspondence to: Elisabeth Framke, National Research Centre for the Working  
Environment, Lerso Parkallé 105, DK-2100 Copenhagen, Denmark. [E-mail:  
elf@nfa.dk]*

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## **e-Appendix 1: Content of the intervention**

The intervention was designed as an open framework with no content requirements regarding changing specific elements of the organisation of work. There were, however, specific requirements to participate in generic invention activities common for all intervention workplaces and to develop and implement workplace specific intervention activities focusing on core job tasks.

Counted from the date when the pre-schools were informed about group allocation (June 2011) until completion of the implementation of the intervention (June 2013), the intervention lasted 25 months.

The intervention was a participatory intervention aiming to improve the working environment by focusing on the core task at work. Participants' participation in the development and implementation of workplace specific intervention activities was pivotal in this intervention. At each intervention pre-school, the pedagogical leader and two employee representatives, the shop steward and the health and safety representative, formed a steering group that managed the intervention while involving all employees in the pre-school.

A working environment consultant was assigned to each pre-school for the full implementation period (June 2011 to June 2013). The steering group in each intervention pre-school received implementation support from the professional working environment consultant for the full implementation period.

The intervention consisted of intervention activities that all steering groups participated in (from September 2011 to March 2013), i.e. seminars and workshops on how to develop and implement intervention activities tailored their own workplace using a participatory approach, change management training, workplace culture and tools to evaluate changes in the workplace. Based on the seminars and workshops and consultants' implementation support,

the steering groups developed and implemented intervention activities tailored their own workplace involving all employees.

The intervention followed a structured and step-wise approach. From September 2010 to September 2011, the intervention project leader team planned and coordinated the intervention study. For five months from September 2011, workplace specific intervention activities were developed by the steering groups with the participation of all employees. When developing workplace specific intervention activities steering group members and employees were asked to ensure improvement of performance of core job tasks by improving performance of central job tasks and procedures. From February 2012 to June 2013, the pre-schools implemented the workplace specific intervention activities. Finally, the pre-schools conducted a self-evaluation between March and June 2013, and the implementation support provided by the consultants ended by the end of June 2013.

This text has been extracted and slightly modified from the PhD thesis of the first author (2).

## e-Appendix 2: Distribution of unnecessary, unreasonable and illegitimate tasks in the study population

**e-Table 1. Distribution of responses to the questions on unnecessary and unreasonable tasks at baseline**

	N	%
<b>A) Unnecessary tasks</b> (How often do you have to do something at work that appears to be unnecessary to you?)	634	100
1) At no time	72	11.4
2) A little bit of the time	210	33.1
3) Some of the time	240	37.9
4) A whole part of the time	90	14.2
5) Most of the time	17	2.7
6) All of the time	5	0.8
<b>B) Unreasonable tasks</b> (How often is your worktime spent on activities outside your central job tasks?)	634	100
1) At no time	80	12.6
2) A little bit of the time	230	36.3
3) Some of the time	208	32.8
4) A whole part of the time	92	14.5
5) Most of the time	20	3.2
6) All of the time	4	0.6

## **e-Appendix 3: Supplementary analyses on the association of unnecessary, unreasonable and illegitimate tasks at baseline with well-being measures at follow-up**

### **Aim**

The aim was to examine whether baseline values of unnecessary, unreasonable and illegitimate tasks predicted level of three measures of well-being (job satisfaction, exhaustion, sleep disturbances) at follow-up, while adjusting for level of well-being at baseline.

### **Methods**

We included 594 participants from both the intervention (n=383) and the control group (n=211) of the Pioneer project. Participants with missing values on the predictor variables (unnecessary, unreasonable and illegitimate tasks) or endpoint variables (job satisfaction, exhaustion and sleep disturbances) at either baseline or follow-up were excluded. Measurement of the predictor variables are described in the main text, measurement of the endpoint variables are described in an earlier publication (1). Using the Genmod procedure in SAS 9.4, we estimated the prospective association of the score of the predictor variables at baseline with the score of the well-being variables at follow-up, while adjusting for level of well-being at baseline. Analyses were adjusted for sex, age, job group, workplace type, workplace size and intervention status (intervention group vs. control group). Workplace identification number was included in a repeated statement.

### **Results**

E-table 2 shows the association of the score of predictor variables at baseline with endpoints after two years of follow-up. Unnecessary tasks and the combined measure of illegitimate tasks were associated with a higher level of exhaustion at follow-up. Unreasonable tasks at baseline did not predict exhaustion at follow-up. None of the predictor variables were associated with job satisfaction or sleep disturbances.

## **Conclusion**

Illegitimate tasks were prospectively associated with reduced well-being at follow-up, measured by level of exhaustion. This supports the notion that illegitimate tasks may affect well-being and that interventions aiming to reduce illegitimate tasks may be beneficial for employees well-being.

**e-Table 2:** Association of baseline scores (2011) in unnecessary, unreasonable and illegitimate tasks with follow-up scores (2013) in job satisfaction, exhaustion and sleep disturbances

	Job satisfaction			Exhaustion			Sleep disturbances		
	Est	SE	p	Est	SE	p	Est	SE	p
<b>Unnecessary tasks</b>	-0.03	0.03	0.25	0.12	0.05	0.01	0.01	0.05	0.88
<b>Unreasonable tasks</b>	-0.03	0.02	0.15	0.03	0.05	0.45	0.02	0.05	0.63
<b>Illegitimate tasks</b>	-0.04	0.03	0.15	0.11	0.06	0.05	0.02	0.06	0.72

Estimate (Est) and Standard Error (SE) for the association of the baseline score in the predictor variable (unnecessary, unreasonable and illegitimate tasks) with follow-up scores in the endpoint variable (job satisfaction, exhaustion, sleep disturbances). Adjusted for sex, age (continuous), job group (pedagogical leader, nursery nurse, nursery nurse assistant, other job group), workplace type (integrated, day care, kindergarten), workplace size (continuous), intervention status, and baseline scores of endpoints. Workplace identification number is included in a repeated statement.

## **e-Appendix references**

1. Framke E, Sørensen OH, Pedersen J, Rugulies R. Effect of a participatory organizational-level occupational health intervention on job satisfaction, exhaustion and sleep disturbances: results of a cluster randomized controlled trial. BMC Public Health. 2016;16:1210.
2. Framke E. Effect and process evaluation of a participatory organizational intervention focusing on core job tasks. PhD thesis. Aalborg University Copenhagen. Faculty of Engineering and Science. Center for Industrial Production; 2016. Available at: [http://vbn.aau.dk/da/publications-phd-technicalnaturalosciences/effect-and-process-evaluation-of-a-participatory-organizational-intervention-focusing-on-core-job-tasks\(68ce55aa-b1ba-4dd3-adaa-2dcb8c847238\).html](http://vbn.aau.dk/da/publications-phd-technicalnaturalosciences/effect-and-process-evaluation-of-a-participatory-organizational-intervention-focusing-on-core-job-tasks(68ce55aa-b1ba-4dd3-adaa-2dcb8c847238).html)