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ARTICLE

Can a managerial intervention focusing on job demands, job resources, and personal resources improve the work situation of employees?

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Abstract

Knowledge regarding the effects on employees of occupational intervention programs targeting psychosocial factors at work, including job demands, job resources, and personal resources, is limited and existing studies show mixed findings. This study aimed to investigate potential effects on employees' job demands (i.e., workload, unnecessary tasks, unreasonable tasks), job resources (i.e., feedback, control, goal clarity), and personal resources (i.e., signaling and limit-setting strategies) of an intervention targeting managers' ways of improving the psychosocial work environment among their staff (SWEActManager). Questionnaire data from employees (n = 40) of a Swedish municipality, whose managers (n = 4) participated in the program, and referents (n = 58 employees), were collected before and after the program. The program included four three-hour workshops delivered during a six-week period. Results from 2(group) × 2(time) ANOVAs showed that all three demands increased over time, while job control decreased. There were no significant group effects. One interaction effect only was significant: Unnecessary tasks increased more among referents than in the intervention group. The few significant short-term effects probably relate to challenges in designing and implementing organizational interventions targeting managers, and evaluating their effects among subordinates. This study adds to the limited research regarding the effects of organizational psychosocial interventions, including managers for their subordinates' demands and resources in a changing working life.

Keywords: organizational intervention, psychosocial factors, job demands, job resources, personal resources

Research regarding demands at work shows that too high job demands, and poor job resources, may yield individual strain, which in turn, may relate to negative outcomes, including burnout, depression, and job dissatisfaction among individual employees (Bakker & Demerouti, 2007; Karasek, 1979; Karasek & Theorell, 1990; Theorell et al., 2015). Similarly, in organizations, this may result in negative outcomes, such as production loss (Lohela-Karlsson, Hagberg, & Bergström, 2014). Recent statistics show that approximately 27% of workers in OECD countries report excessive job demands, with 17% reporting having job strain (OECD, 2014). As for resources, 45% of workers in OECD countries report that they have too little resources to adequately perform their

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work (OECD, 2014). In Sweden, an OECD country, work within the welfare sector has consistently been reported to involve high demands and poor resources that risk compromising employee health and organizational productivity (Hassard et al., 2014; Trydegård, 2012). This has resulted in research on ways to improve the situation, including intervention programs, such as the one investigated here.

The research literature includes different models describing and classifying factors of the psychosocial work environment into demands and resources, respectively, with some models also including employee characteristics. The Job Demands–Resources model (JD–R model; Bakker & Demerouti, 2007; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001), in covering a variety of factors relating to both strain and gain on both individual and organizational levels, can be considered a meta-model. Thus, this meta-model can be used as a framework for research on occupational intervention programs. According to the JD–R model, a psychosocial work environment can include numerous job demands that typically vary between occupations and settings. Job demands characterizing the welfare sector in Sweden, which includes social services, health care, and education, involve having too much to do at work with uncertainties relating to whether tasks are to be carried out at all or by someone else. Workload and illegitimate tasks (i.e., unnecessary and unreasonable tasks; Semmer et al., 2015) have been identified as important sources of stress (Aronsson, Bejerot, & Härenstam, 2012; Karasek et al., 1998; Semmer et al., 2015). Besides job demands, work also includes various job resources, which emanate from organizational management and job design in a top-down manner and enable employees to handle the job demands (Bakker, Demerouti, & Euwema, 2005; Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007). Job resources that are typical for the welfare sector include factors, such as knowing how well one performs at work, having a possibility to influence the job and having clear work goals (Härenstam & MOA Research Group, 2005; OECD, 2014). Substantial research has shown that job resources such as feedback (e.g., Bailey, Madden, Alfes, & Fletcher, 2015), control (e.g., Alarcon, 2011; Nahrgang, Morgeson, & Hofmann, 2011), and goal clarity (Fried, Shirom, Gilboa, & Cooper, 2008; Saber, 2014) are associated with favorable outcomes, including increased levels of commitment and job satisfaction, as well as lower levels of burnout, among employees.

Using the JD–R model as a meta-model, job resources can be distinguished from personal resources (Bakker & Demerouti, 2007). While job resources primarily relate to the organization and vary little within the same position, personal resources relate more strongly to individual employees and thus vary between individuals. Besides factors such as general mental ability or personality, which are more stable over time (cf. Gottfredson, 1997), personal resources may vary between contexts and include ways of thinking and acting that are observable for others, and thus, possible for employees to change and for managers to promote (cf. Gottfredson, 1997; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). Specifically, at work, personal resources can reflect an employee's ability to influence the work environment and include aspects such as clearly limiting the amount of work (limit-setting strategies) and raising different work-related issues with the immediate manager (signaling various issues) in a bottom-up way (cf. Wrzesniewski & Dutton, 2001; Xanthopoulou et al., 2007). Among human service professionals working in the welfare sector, the individual's ability to set personal limits and speak up when job demands are increasing or too high are two personal resources that can be used both by staff and by managers once they are aware of that these resources exist and potentially play an important role in the monitoring of the organizational distribution of job demands and job resources. To date, research investigating personal resources is limited (cf. Xanthopoulou et al.,

2007), particularly in terms of "limit-setting strategies" and "signaling", meaning that there is a need to investigate these resources in more detail.

From an international perspective, regulations regarding psychosocial work environment vary (e.g., EEC, 1989). According to the legislation in Sweden, employers have the ultimate responsibility to provide for a good working environment. This involves regularly monitoring the working environment (AFS, 2001; SFS, 1977). To comply with the legislation and make improvements, organizations can make use of intervention programs. As regards such interventions or programs focusing on psychosocial factors, these are often of the character of secondary rather than primary intervention programs and target subordinates rather than the management and the organization of work. Such intervention programs typically involve learning techniques allowing individual employees to manage and cope with the stress and strain of various job demands (Richardson & Rothstein, 2008).

However, with organizations having the responsibility to provide and monitor a good psychosocial work environment, managers hold key positions: specifically, in representing and controlling the work, managers can regulate different psychosocial demands and resources (AFS, 2015). This means that managers are both key carriers of knowledge of these factors and key agents in using their individual skills (e.g., communicate, discuss, have a dialog with employees around their work tasks) to influence the psychosocial work environment. With the key role of managers, they are valuable to target when striving for developing organizational awareness and knowledge of psychosocial factors associated with a good work environment. This includes making clear how managers themselves can influence and improve the work environment through adapting their management styles to assist subordinates using their skills to communicate change by changing their own behaviors (e.g., adjusting demands, providing clear guidance and feedback, providing autonomy to employees, assisting employees in setting limits when a work situation becomes too strenuous).

Considering that all jobs are likely to involve both job demands and job resources, it seems important for managers in organizations to comply with current laws and regulations to provide reasonable job demands and adequate resources (Abrahamsson & Johansson, 2013; Göransson, Näswall, & Sverke, 2009; Näswall, Sverke, & Göransson, 2014). Organizations typically have managers to facilitate management of employees. This means that managers are key to target in efforts to increase the awareness of different factors of the psychosocial work environment. This may be of particular importance in the welfare sector that mainly employs women and with their managers typically having a large span of subordinates to manage. This adds complexity for managers and seems related to them more often reporting higher job demands and lower job resources (Nyberg, Leineweber, & Magnusson Hanson, 2015).

Intervention programs focusing specifically on managers to increase their knowledge and understanding of psychosocial processes at work may be ideal for different reasons. One of the most important aspects relate to managers having a leading role in the organization, thus, allowing them to influence the psychosocial work environment in different ways. The combination of organizations needing to conform with legislation and regulations and managers' leading role within organizations means that managers in Sweden have a major responsibility for the working conditions, including different psychosocial factors at work, such as various demands and resources. Compared to traditional work-site-based interventions, which generally involve large groups of employees, interventions targeting managers is a less time consuming alternative and potentially a more cost-effective way for organizations to develop and maintain sound

work practices with adequate demands and resources. The present study includes an evaluation of an organizational intervention program, the Systematic Work Environment Action program (SWEActManager), which was offered to managers and focused on psychosocial factors at work.

Organizational management intervention programs focusing specifically on psychosocial aspects have been suggested as a way of increasing knowledge by the identification of central job demands and job resources and by building and using various resources (Theorell, Emdad, Arnetz, & Weingarten, 2001). In general, such interventions have focused on the effects of different leadership styles, such as transformational leadership, accessed via employee perceptions of their immediate manager's behaviors and relating these two different employee outcomes (Larsson, Sandahl, Söderhjelm, Sjövold, & Zander, 2017). However, it has been found difficult to evaluate the effects of managerial interventions on the employee level; this is considered due both to indirect and delayed effects (for a review, see Kelloway & Barling, 2010). Yet, other types of interventions focusing on managers do not necessarily include leadership qualities or the ability to lead. Instead, there is a focus on leadership development using an educational approach that targets the psychosocial work environment. Research has shown that such interventions targeting managers have effects on the employee level. For instance, Romanowska et al. (2011) found that a humanistic leadership development program focusing on psychosocial factors had positive long-term effects on psychosocial, biological, and behavioral outcomes of both leaders and employees, despite no employees participated in the program (i.e., a transfer effect). Thus, educating managers about psychosocial factors (i.e., not leadership qualities or abilities to lead) at work may have positive effects on employees' perceptions of their psychosocial work environment.

Taken together, there are few empirical studies of psychosocial organizational intervention programs targeting managers, which aim at reducing subordinates' job demands and increasing both their job resources and personal resources. Thus, the aim of the current study was to evaluate if subordinates' perceptions of job demands (workload, unnecessary tasks, and unreasonable tasks), job resources (feedback, control, and goal clarity), and personal resources (signaling and limit-setting strategies) would improve after an organizational intervention program (SWEActManager), focusing on demands and resources at work, had been delivered to managers. The intervention program targeting managers was hypothesized to have a beneficial effect on their subordinates' perceptions of the work environment in terms of job demands, job resources, and personal resources. The study adds to the existing literature by increasing the understanding of the extent to which organizational interventions targeting management may improve employees psychosocial work environment.

The SWEActManager intervention

The SWEActManager intervention program focuses on psychosocial work aspects and is offered to managers. The program is theory driven, meaning that it is based on prior and well-established psychosocial research on demands and resources at work (e.g., Bakker & Demerouti, 2007; Karasek, 1979; Karasek & Theorell, 1990). The content and method of the intervention was developed through the joint collaboration between researchers and consultants from a well-established occupational health care service. The SWEActManager program delivered to managers has a multimodal set-up (combines survey-feedback, training, individual reflection, and team group discussions) and includes four three-hour workshops delivered over a six-week period. Each workshop mixes short theoretical sessions with teamwork in smaller groups, discussions

in pairs, with time for individual reflection with an overall recap in the larger group. Thus, all workshops allow participants to communicate, discuss, and reflect throughout their knowledge building process. Specifically, participants have the chance to practice ways to communicate through workshops allowing and requiring dialog with other participants. This enables participants to engage in different discussions providing opportunities to share experiences, and to learn from each other. The workshops thereby provide time for individual reflection to give participants a chance to develop their personal knowledge and skills.

The implementation of the intervention program is guided by an intervention manual describing the content of each of the four workshops along with the material to use. To facilitate for the occupational health care service consultants, who delivered three out of four workshops, the manual also describes the aim and design of the research project, provides guidelines of the implementation process, and specifies the roles of participants, organizational representatives, researchers, and occupational health care consultants. The below text describes the overall content of the four workshops.

Workshop 1: Survey-feedback and theory module

The three-hour workshop starts with an approximately 1.5-h theoretical plenary lecture, which focuses on increasing the competence of – and creating an awareness of – different ways to promote long-term health and reduce the various health risks at work. With the current regulations and discussion around sick-leave issues, most managers have an overall awareness of the linkages between work and health but knows less of how different psychosocial factors may act. Thus, the theory module provides a knowledge base including how different work characteristics, such as demands and resources at work, may function (e.g., Bakker & Demerouti, 2007; Karasek, 1979; Karasek & Theorell, 1990). There is a focus on how managers can work to alleviate job demands and promote different resources (job and personal) for their employees. This is followed by an initial survey-feedback that reports of the survey administered among the subordinates before the start of the intervention. The researchers, with their profound theoretical knowledge, delivered the lecture and the survey-feedback including subordinates' perceptions of various traditional job demands and job resources; this also involved giving managers the opportunity to discuss survey findings to provide all with a better understanding of the organization's work environment. Also, the survey-feedback gave managers the opportunity to identify and initiate a discussion around different work environment factors (demands and resources) that they considered important for their employees. For instance, they were given opportunities to discuss and reflect upon different aspects, such as the risk of job demands compromising health, how job and personal resources may buffer negative effects of excessive job demands, the importance of adequate demands and resources for healthy work practices, and the importance of integrating work environment activities with core operations.

The following workshops, i.e., workshops 2–4, were managed by the organizational health care consultants.

Workshop 2: Current situation and priority of demands and resources

The workshop primarily aims to facilitate the managers' analyses of the work environment through identifying and understanding demands and resources at different organizational

levels. This means that the participants in their analyses have to consider themselves, their subordinates, and the organization, to get an overview of the work environment. The participants work individually and in groups and make use of the information acquired from the first workshop. Next, the results are discussed in the larger group to identify the most important themes. The participants also assess at what level (i.e., at political, managerial, coworker, union, or other level) the mandate for each of these demands and resources was located in order to pinpoint the most important factors to be addressed in the workshops. Moreover, as demands and resources may be affected by how tasks and assignments are distributed throughout an organization, this distribution process is discussed and drawn up, including how dialogs between relevant stakeholders (e.g., municipal management, managers, coworkers, teams, unions, departments) typically occur in such a process. Finally, the participants identify their own demands and resources in analyzing their own situation in their own unit including their employees.

Workshop 3: Action plan

The workshop provides a follow-up of the analysis of the baseline situation, where the participants are supported in understanding how they, both individually and in groups, can address and influence relevant demands and resources for their staff. There is a focus on different ways of problem-solving, the manager's role in the work environment (e.g., thoughts, values, concerns), ways of dealing and interacting with subordinates, and how to keep a fruitful dialog both upwards and downwards in the organization. At the end of the workshop, participants are to prioritize between the demands and resources considered most salient and to draft an action plan in order to address the prioritized issues. The action plan is to be used by the participants as a tool in the work of reducing job demands, promoting job resources, and improving personal resources among their staff.

Workshop 4: Challenges, possibilities, and the strategy forward

The workshop focuses on the action plan by allowing participants to identify and analyze any challenges, and to find strategies to overcome these, to continue working on demands and resources within different levels in the organization. In this workshop, the managers also focus on how they are to maintain and develop the action plan in the organization and how they continuously can learn from each other during this maintenance and development process. The importance and possibility of the integration between the action plan and the general business plan is also discussed during the workshop. This final workshop also includes summing up and evaluating the intervention in an attempt to make use of the experiences in the future maintenance of the action plans.

Method

Setting

The study was performed in a Swedish municipality organization focusing on social services, care, and support. This is a sector characterized by high workload. Responsibilities within the organization include activities, such as day care and home care for the elderly and disabled, health care in sheltered housing, housing adaptation allowances, different transportation ser-

vices, and the managing of association grants, fund assets, and community facilitators. The number of subordinates constituting a work group ranged between approximately 29 and 68 with group sizes being matched between the intervention and reference groups. The operating manager approved the research project within the municipal organization and appointed an administrator to support in preparing for data collection and the implementation of the intervention. The research project was approved by the Regional Ethics Committee in Stockholm (Ref. No. 1010/1517-31/5).

Design

The intervention consisted of the four workshops that make up the SWEAct intervention program, and was implemented between August and October 2013. To avoid direct contamination between the intervention and reference groups some units were initially selected to belong either to the intervention group or to a matched reference group. The selection and matching of intervention and reference groups were based on a similarity in work tasks and responsibilities of home and elder care work. With these prerequisites, the process involved a randomization on the unit level in order to avoid self-selection bias. Half of these units' managers were selected to take part in the SWEActManager program. The subordinates of these managers constituted the intervention group in this study. The equivalent numbers of managers not taking part in the intervention were also identified and the subordinates of these managers constituted the reference group in the present study.

Before (Time 1) and approximately six months after (Time 2) the intervention, online questionnaires were administrated to all employees in the intervention and reference groups. Figure 1 summarizes the study design. The intervention targeted the managers, while the evaluation included their subordinates.

Sample and procedure

An email including a welcome message and information about the purpose of the research project, a presentation of the research team, information about research ethics, and a link to the online survey was sent to all employees. Prior to the intervention, the sampling of managers to the intervention and reference conditions, respectively, was performed in collaboration between the operation manager and the research project team. The randomization of units resulted in employees from units with managers participating in the intervention originating from two department areas out of a total of six department areas within one of two main divisions. Subordinates with a manager who did not participate in the intervention, thus belonging to the

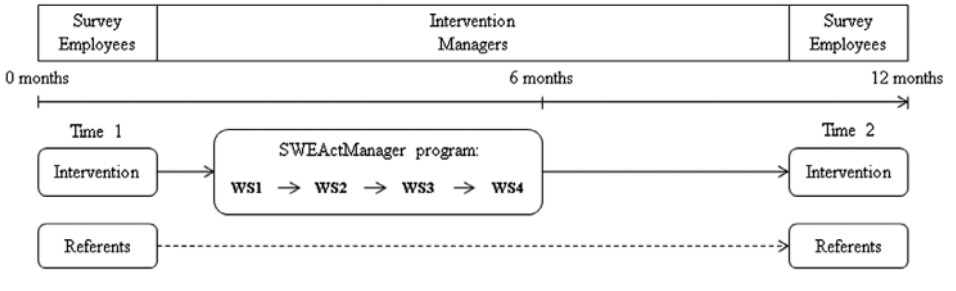

Figure 1. Study design.

reference group, originated from the other four department areas which were geographically adjacent. The employee data used in this study originates from subordinates of four managers who took part in the SWEAct intervention (intervention group; $N = 159$) and a matched sample of employees whose managers did not attend the workshops (reference group; $N = 172$).

Table 1 summarizes response statistics and demographics (that were similar across groups) for intervention and reference groups. Response rates were around 50% in both groups at both Time 1 and Time 2. This resulted in longitudinal sample sizes of 44 employees in the intervention group and 63 in the reference group. These sample sizes were reduced to 40 and 58, respectively, due to missing data in all study variables. In the final samples, the internal missing data added up to .91% missing values at Time 1 and 2.36% at Time 2. To handle the missing values an expectation-maximization (EM) imputation was performed separately for every block (job demands, job resources, and personal resources) and the two time points (Time 1 and Time 2). MCAR tests were found non-significant, i.e., values were missing completely at random (Little & Rubin, 1989).

Measures

Table 2 presents the different measures of the job demands (workload, unnecessary tasks, unreasonable tasks), job resources (feedback, control, goal clarity), and personal resources (signaling,

Table 1. Summary of employee response statistics and demographics.

	SWEActManager	Referents	t/χ^{2a}
Response statistics			
Time 1			
Eligible participants	159	172	
Responses	85	98	
Response rate (%)	53	57	
Time 2			
Eligible participants	147	158	
Responses	61	83	
Response rate (%)	41	53	
Longitudinal			
Eligible participants	147	158	
Responses	44	63	
Response rate (%)	30	40	
Final sample	40	58	
Sample characteristics (Time 1)	$n = 40$	$n = 58$	
Age *M* (SD)	49 (10)	49 (10)	$T_{(df=96)} = .11, p = .65$
Gender (% Women)	83	86	$\chi^2_{(df=1)} = .25, p = .62$
University education completed (%)	40	31	$\chi^2_{(df=1)} = .84, p = .36$
Level of permanent employment? (%)	100	97	$\chi^2_{(df=1)} = 1.41, p = .24$
Full-time work?[b]	58	48	$\chi^2_{(df=1)} = .81, p = .37$

[a]Independent *t*-test and χ^2-test between groups at Time 1.
[b]Any part-time employees included in the sample analyzed, are only part-time employees working more than 50% of full-time.

Table 2. Overview of measures at Time 1 and Time 2.

Variable	No. of items	Example of wording	References
Job demands			
Work load	3	I often have too much to do at work.	Beehr, Walsh, and Taber (1976); Falkenberg, Näswall, Lindfors, and Sverke (2015)
Unnecessary tasks	5	Do any of your work tasks make you wonder if they actually need to be done at all?	Aronsson et al. (2012); Semmer, Tschan, Meier, Facchin, and Jacobshagen (2010)
Unreasonable tasks	5	Do you have to perform work tasks that you think should be done by someone else?	Aronsson et al. (2012); Semmer et al. (2010)
Job resources			
Feedback	3	My manager generally lets me know how satisfied he/she is with my work effort.	Falkenberg et al. (2015); Hackman and Oldham (1975)
Control	4	I have a sufficient degree of influence regarding my work.	Falkenberg et al. (2015); Sverke and Sjoberg (1994); Based on Hackman and Oldham (1975); Walsh, Taber, and Beehr (1980)
Goal clarity	4	What is expected of me at work is clearly expressed?	Caplan (1971); Falkenberg et al. (2015); Rizzo, House, and Lirtzman (1970)
Personal resources			
Signaling	2	I take problems to a higher decision-making level.	Eklöf, Pousette, Dellve, Skagert, and Ahlborg (2010)
Limit-setting strategies	3	I do not take on more work than I think I can handle.	Eklöf et al. (2010)

Note: Employees were asked to provide ratings along a response format ranging from 1 (Strongly disagree) to 5 (Strongly agree) for all measures apart from the two measures of unnecessary and unreasonable tasks, which had a response format ranging from 1 (Never) to 4 (Very often).

limit-setting strategies) used in the present study. These measures correspond to factors that previous studies have identified as important aspects of the psychosocial work environment but also to what was discussed and prioritized by managers throughout the different workshops. All measures were derived from established questionnaires and have previously been used in Swedish. Table 3 presents correlations (Pearson *r*), means, standard deviations, and reliabilities (Cronbach's α). With a few exceptions, the reliabilities were above .70 for all variables at each measurement occasion and consequently considered acceptable (Nunnally, 1978).

Statistical analyses

To investigate the potential short-term effects of the intervention among managers for their subordinates' job demands, job resources and personal resources, eight analyses of variance (ANOVA) were conducted. Specifically, these analyses included main effects of group (group differences regardless of time) and main effects of time (differences between Time 1 and Time 2 regardless of group). A significant interaction effect between group and time indicates whether the mean

Table 3. Correlations (Pearson *r*), means, standard deviations, and reliabilities (Cronbach's α) for the full employee sample ($N = 98$) at Time 1 and Time 2.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time 1																
Job demands																
1. Work load																
2. Unnecessary tasks	.21*															
3. Unreasonable tasks	.39**	.47**														
Job resources																
4. Feedback	−.18	−.13	−.03													
5. Control	−.40**	−.24*	−.30**	.35**												
6. Goal clarity	−.29**	−.45**	−.31**	.33**	.34**											
Personal resources																
7. Signaling	−.23*	−.17	−.23*	.21*	.31**	.16										
8. Limit setting strategies	−.46**	−.22*	−.34**	.22*	.44**	.29**	.53**									
Time 2																
Job demands																
9. Work load	.66**	.18	.33**	−.14	−.22*	−.21*	−.21*	−.40**								
10. Unnecessary tasks	.27**	.44**	.38**	−.21*	−.21*	−.23*	−.11	−.17	.44**							
11. Unreasonable tasks	.34**	.36**	.59**	−.00	−.24*	−.20	−.08	−.25*	.54**	.56**						
Job resources																
12. Feedback	−.18	−.28**	−.20	.46**	.29**	.14	.25*	.14	−.21*	−.41**	−.24*					
13. Control	−.31**	−.30**	−.25*	.23*	.57**	.24*	.16	.20*	−.26**	−.37**	−.36**	.41**				
14. Goal clarity	−.32**	−.43**	−.43**	.19	.32**	.64**	.13	.38**	−.40**	−.30**	−.49**	.25*	.33**			
Personal resources																
15. Signaling	−.15	.00	−.13	.15	.23*	.03	.43**	.38**	−.19	−.12	−.15	.15	.23*	.09		
16. Limit setting strategies	−.51**	−.22*	−.34**	.25*	.43**	.24*	.40**	.67**	−.50**	−.23*	−.30**	.16	.41**	.36**	.39**	
M	2.51	2.18	1.96	3.42	3.58	4.27	3.42	3.44	2.71	2.53	2.21	3.35	3.36	4.26	3.42	3.43
SD	.99	.71	.62	1.05	.75	.76	.93	.92	.1.02	.66	.56	1.06	.80	.64	.85	.78
α	.69	.85	.79	.88	.64	.72	.72	.75	.82	.84	.70	.92	.78	.79	.60	.73

Note: Scale range: 1–5 for all variables but 10 and 11, which ranged from 1 to 4.
*$p < .05$; **$p < .01$.

levels of the study variables changed differently over time between the intervention group and reference group. The analyses were performed separately for each type of demand and resource.

Results

Table 4 presents mean values for the intervention and the reference groups before (Time 1) and after (Time 2) the intervention targeted to their managers. Table 4 also shows the univariate *F* tests from these analyses to detect any group differences, time differences and/or interaction effects. The study variables did not differ at baseline between the intervention and reference groups.

As for the three *job demands*, there were no significant main effects of group. However, there were significant main effects of time for workload (partial $\eta^2 = .05$), unnecessary tasks (partial $\eta^2 = .17$), and unreasonable tasks (partial $\eta^2 = .17$), suggesting an overall increase in these job demands in both groups over time. One out of three interaction effects between group and time was significant, indicating a larger increase in unnecessary tasks between Time 1 and Time 2 for the reference group (partial $\eta^2 = .04$) whose managers did not participate in any intervention.

Regarding *job resources*, there was no significant group effect. There was one significant effect of time, which indicated that control generally decreased over time (partial $\eta^2 = .07$). No significant interaction effect was found.

When it comes to *personal resources*, there were no significant main or group or interaction effects, thus, indicating that the levels of signaling and limit-setting strategies remained stable over time for both groups.

Discussion

The present study set out to assess the effects of an organizational intervention, that targeted managers of a Swedish municipality, on their subordinates' experiences of job demands (workload, unnecessary tasks, unreasonable tasks), job resources (feedback, control, goal clarity) and personal resources (signaling, limit-setting strategies). The intervention (SWEActManager), which included four three-hour workshops conducted among managers of social welfare departments in a Swedish municipality, consisted of survey-feedback and a theoretical lecture that were used as input for further communication, discussion, and reflection on different job demands, job resources and personal resources of their staff. Overall, the results showed that subordinates' job resources and personal resources remained stable over time, also across the intervention and reference groups. The only significant main effects concerned job demands, which increased significantly over time for employees in both conditions, and one of the job resources (control), which decreased in both groups. As for interactions, there was only one significant interaction effect, which showed that the level of perceived unnecessary tasks increased more among subordinates in the reference group than among those in the intervention group, i.e., among employees whose managers had participated in the intervention. Taken together, these results suggest that the SWEActManager program with its focus on managers had no major impact on their subordinates' experiences of demands and resources at work. This is despite the mean level of unnecessary tasks not increasing as much among employees in the intervention group as among those whose managers were not included in the SWEActManager intervention program. The program

Table 4. Mean values (and standard deviations), tests for mean differences from before to after the intervention, and univariate tests between the intervention and reference groups. All analyses conducted on employee data.

		SWEActManager (n = 40)		Referents (n = 58)				
		Time 1	Time 2	Time 1	Time 2	Group[a]	Time[a]	G × T[a]
	Variable	*M* (SD)	*M* (SD)	*M* (SD)	*M* (SD)			
Job demands	Work load	2.52 (.94)	2.69 (.87)	2.50 (1.03)	2.72 (1.11)	.00	5.35*	0.89
	Unnecessary tasks	2.26 (.57)	2.43 (.48)	2.12 (.79)	2.59 (.76)	.01	19.7***	4.15*
	Unreasonable tasks	1.97 (.50)	2.20 (.49)	1.96 (.69)	2.22 (.61)	.01	19.8***	.09
Job resources	Feedback	3.48 (.94)	3.46 (.76)	3.39 (1.13)	3.28 (1.22)	.54	.32	.14
	Control	3.57 (.77)	3.44 (.69)	3.58 (.73)	3.30 (.87)	.18	7.73**	1.07
	Goal clarity	4.14 (.73)	4.16 (.59)	4.36 (.77)	4.33 (.67)	2.18	.01	.16
Personal resources	Signaling	3.36 (.82)	3.49 (.76)	3.47 (1.01)	3.36 (.91)	.01	.02	1.40
	Limit–setting strategies	3.39 (.78)	3.37 (.71)	3.48 (1.00)	3.47 (.83)	.37	.04	.00

[a]Univariate F test, df(2,96).
*p < .05; **p < .01; ***p < .001.

may, in involving an extra activity for the managers, have included an actual increase of job demands for their subordinates, thus, leaving no room for any other effects.

The fact that the job demands increased over time while there were no similar changes in job resources or personal resources may suggest tightening psychosocial working conditions in the social and welfare sector in Sweden in general (Petterson, Hertting, Hagberg, & Theorell, 2005), which aligns with international trends (Lee & Strang, 2006). Specifically, we found an overall decrease in one of the job resources, namely that of control, which probably relates to the general impairments in the working conditions of this sector. As for personal resources, the fact that both signaling and limit-setting strategies remained stable over time and across groups underscores the difficulties in this kind of intervention. Such personal resources, compared to job resources, may be more difficult for managers to identify and strengthen, as they are closer to the individual and thus may seem less explicit to others unless they are manifested in overt behaviors. However, personal resources may also depend on the relationships and trust between managers and staff. Such a complexity may mean that personal resources are more difficult to change. Also, the intervention program targeted managers, who were offered knowledge and skills relating primarily to the psychosocial work environment. This means that the managers were expected to make use of the acquired knowledge and skills in their relationship with their subordinates (cf. Frick, 2013; Heller, Pusic, Strauss, & Wilpert, 2004) and encourage their staff in developing such personal resources. However, this may take longer and is probably a more complex process. Moreover, subordinates' actual job demands may well have increased over time, thus, hindering other intervention effects.

There may be several reasons for the few statistically significant effects of the intervention program. A general aim of the SWEActManager program was to contribute to the organizations human capital, that is, to add to managers' knowledge and to improve their skills (e.g., communicate, discuss, conduct a dialog) of psychosocial factors, including demands and resources, on both organizational and individual levels. The few significant effects detected in this short-term

follow-up of the SWEActManager program mainly show that interventions targeting managers involve difficulties in decreasing their subordinates' job demands and increasing their resources at work. The SWEActManager program focused on both increasing the managers' knowledge and skills of their units' psychosocial work environment and that of their subordinates' but it seems difficult to argue that an intervention program producing only one interaction effect (i.e., a lower increase in unnecessary tasks) is successful. Perhaps the lack of effects in personal resources relate to these resources deriving from the subordinates themselves (bottom-up), while job demands and job resources seem more likely to be set by managers (top-down) and thus seem easier to influence by managers. Also, more time and effort is needed in educating managers of how they through dialog may be able to help enhance their subordinates' ways of signaling and limit-setting when they are stressed at work.

Another explanation involves the learning process of the managers: in dealing with different work environment priorities and competing organizational demands, other factors than those investigated here may have received a higher priority than, for instance, the implementation of the action plans. As for different priorities, the managers may have focused on different psychosocial factors in the workshops. Despite belonging to the same organization, different managers may have focused on issues being specific for their different units, which in turn may have had different effects in the different units. This in turn means that any changes perceived by the subordinates may have been small when combining data from different units, which obscures any actual change.

However, the results of the present study show that, overall, the employees did not experience any changes in demands or resources at work after their managers had participated in the SWE-Act intervention program, thus suggesting no transfer effect from the managers to their staff. Other factors aside, this may of course relate to the study design with a short follow-up time, meaning that longer follow-ups are needed to ascertain a certain level of interaction between managers and their subordinates to allow managers to transfer in different ways their acquired knowledge and skills. Another type of intervention program design that can be used to avoid the need for transfer effects and cover the employee perspective involves including both managers and subordinates in the same workshops (Nielsen & Randall, 2012). While such a design may improve intervention effects, it also requires more time and involves higher organizational costs.

Looking at existing research evaluating psychosocial interventions in workplaces, previous studies have mainly focused on intervention programs targeting subordinates or complete work units rather than managers. In one such one-year psychosocial intervention study, including an educational module focusing on psychosocial aspects and targeting white-collar managers and staff, goal clarity did not alter, while feedback improved significantly (Anderzén & Arnetz, 2005). In our study the managers decided on the content and output of the workshops, as they themselves were the ones identifying which demands and resources to focus on in their final action plan. However, when looking at the means levels among their staff, the mean values in goal clarity were high already before the intervention (above 4.0 at both time points) which suggests that engaging in changing this high level may not be a top priority of the managers.

Furthermore, few studies have included different resources (job and personal) as work-related outcome measures and instead focused on job demands (cf. Williams-Whitt et al., 2015). This makes it difficult to compare consistently the present study findings with existing research (cf. Michie & Williams, 2003; Richardson & Rothstein, 2008; Van der Klink, Blonk, Schene, & Van Dijk, 2001). For instance, it is hard to say whether psychosocial resources are more difficult to change than other psychosocial aspects of work, such as job demands (Brauchli, Schaufeli, Jenny, Fül-

lemann, & Bauer, 2013). Yet, the few significant findings of this study were mainly found in the block of job demands. Additionally, few recent intervention studies have looked into the psychosocial resources characterizing a changing working life, such as feedback, control, goal clarity, signaling, and limit-setting strategies which were investigated here. However, investigating psychosocial resources seems important in a public organization having to adapt to political and societal changes, particularly in view of the overall research area asking for in-depth knowledge of various job resources (Bakker & Demerouti, 2007; Day & Randell, 2014). This relates to resources not only being potential psychosocial drivers of motivational processes but also relates to them balancing various demands.

Moreover, while attending the workshops, inherent pressures in the workplace may render it difficult for managers to bring the level of energy and attention needed to learn. Here, it may also have been challenging to balance the attention in the specific formal learning event and subsequently make use of it in an informal on-the-job situation including interaction with their subordinates. Yet, the communication, discussion, and reflection used as tools in this program's knowledge building process were used as active learning techniques, which typically facilitate the process (Noe & Tews, 2014). However, the few significant short-term effects of the intervention – only one interaction effect out of eight – may relate to the fact that managers, despite meeting with their workgroups on a regular basis and discussing daily issues, not having had enough time to ponder, implement and act on knowledge and skills acquired during the program in a way that was noted by the subordinates. This means that the findings may relate to the SWEActManager program being directed to managers and this evaluation only involving their employees. As the subordinates were not actively involved in the program and its workshops, any effects may be delayed until the SWEActManager program has been disseminated throughout the organization and its workgroups. Of course, such effects would only occur if an actual transfer of the program into the daily work and interactions between managers and employees had taken place.

Recent research suggests that such transfer effects are possible (Romanowska et al., 2011) but these have often been argued difficult to find due to difficulties in detecting the timing of potential delayed indirect effects (Kelloway & Barling, 2010). Such difficulties in discerning substantial, or any, effects may relate to the timing of various events involving manager–subordinate interactions (e.g., the regularity and characteristics of interactions, actual attitudes and behavior change of managers in different respects). This may well be the case in the organization included in this study, which included the welfare sector and mostly had women managers with several subordinates (ranging from 29 to 68 in the different units) that not only work in the office but are individually scattered in the field and have one scheduled group meeting per month. Again, managers may need more time to communicate their action plans to their subordinates but also to meet and address issues relating to various psychosocial factors at work.

Methodological considerations

Due to methodological constraints, the present findings should be interpreted cautiously. As the study sample was small, this involves reducing statistical power but does not necessarily influence reliability estimates (Peterson, 1994). Still, some reliability estimates were on the low side, such as control at Time 1 and signaling at Time 2. However, no reliability estimate was low at both time points. Also, reliability coefficients below .70 do not seem unusual even for measures with few items (Peterson, 1994). Still, with signaling only including two items, future research is needed to investigate and develop further the measure. This holds for personal resources in general, that is,

additional studies are needed to investigate various personal resources, different ways of operationalizing personal resources, and other feasible ways to collect data on personal resources.

As is typical for organizational interventions in general, it is difficult to control for changes in the workplace. Moreover, randomization is challenging in organizational settings and it was obviously impossible to randomize subordinates to managers. However, we managed almost to randomize at a unit level: some units were randomized to take part in the intervention and matching units were selected to form a reference group. The selection of intervention and reference units aimed for a maximum of usable responses and the matching process was based on the intervention and reference units having comparable work tasks. Moreover, as for managers, the procedure focused on selecting units to minimize contact between employees in the intervention and reference groups. Still, despite the fact that this was a longitudinal study with an intervention group and matched referents, the finding that there was a significant interaction effect only for one job demand – unnecessary work tasks, which increased more among subordinates in the reference group – makes it difficult to conclude that an intervention program targeting managers may influence their subordinates' perceptions of the psychosocial working conditions (internal validity; McQueen & Knussen, 2006).

Furthermore, the program did not support or follow-up on the active implementation of the action plans into the organization. This means that there are no details on whether the action plans were properly implemented. Thus, poor implementation may be a reason for the few effects. Even though the program contributed to facilitating such processes by actively allowing participants to reflect and discuss various ways of implementation in the last workshop, actively supporting the implementation process may yield more consistent effects. For instance, asking about implementation in follow-up questionnaires would be one way to detail whether and how action plans were implemented.

Additional analyses were performed with respect to the managers' attendance rate in workshops, in relation to the managers' perception of the organization's alterations in comprehension, discussions, or improvements of the work environment. However, these analyses revealed no significant effects of attendance on the employees' perceptions. Moreover, employee data were dichotomized based on managers' workshop attendance (high = equal to or more than three; low = equal to or less than two) to investigate whether there was any difference in demands and resources depending on the managers' workshop attendance. Again, no significant effects emerged, meaning that the subordinates' perceptions of their demands and resources seem unrelated to the manager's workshop attendance. So, additional research, including larger samples, and different professions within other sectors, is needed.

When it comes to the time needed for an intervention program to yield effects, suggestions from systematic research in this area are at best unclear. A meta-analysis recommends controlled follow-ups after 12 weeks (Van der Klink et al., 2001), while empirical research show effects even after 3.5 years (Lohela, Björklund, Vingård, Hagberg, & Jensen, 2009). As for this study, the managers first need time to process the new knowledge and skills they have gained during the program before it may perhaps be reasonable to expect any transfer via the managers' leadership to their subordinates' perceptions of the work environment. In this study, the Time 2 measurement was conducted approximately six months after the intervention to discern direct effects of the program. Such a long-time span between the last workshop and Time 2 of course involves risking not knowing whether any effects are due to the intervention program or other changes. At the same time, six months may be too short a time period for revised managerial practices to actually

alter their subordinates' demands and resources at work. Ideally, an intervention program would also need repetitive boosts to maintain and constantly preserve integration and change of the work practices of an organization.

Even though the SWEActManager intervention program includes aspects underscored in previous research – such as, information transfer (Kelloway & Day, 2005) of both survey findings and theory via an educational form targeting aspects of the psychosocial work environment (e.g., job demands, job resources, personal resources) at the organizational level (Ljungblad, Granström, Dellve, & Åkerlind, 2014) – the significant effects, specifically for resources, were few. When it comes to the evaluation of organizational interventions it has been argued that it is important to evaluate not only the effects but also the process (Kristensen, 2005; Nielsen, Randall, Holten, & González, 2010). Consequently, we need to take into account that we only evaluated some of the effects of the intervention, whereas it is not guaranteed that the implementation process was of sufficient quality. For example, already a few changes can be made: add the number of workshop occasions to increase flexibility, assemble workshop participants from neighboring departments to get a better focus in the workshops, monitor and document clearer what actually happened in the workshops, support the implementation of action plans, and make compulsory the participation in workshops (not with the main focus to increase the frequency in workshop attendance but to get all managers on board). With this in mind, the present study findings may reflect program failure rather than theory failure. However, if we consider the quality of the implementation process as neither better nor worse than in other intervention programs, this study may also point at the difficulties in creating and implementing intervention programs, particularly among managers only, thus, underscoring the need for further research within the field.

Conclusion

To summarize, these findings provide limited support for any short-term positive effects of the SWEActManager intervention program on subordinates' perceptions of different job demands, job resources, and personal resources, despite this being the focus of the intervention program. Yet, the study shows the challenges of designing, implementing, and evaluating psychosocial organizational intervention programs due to the complexity of their design and set-up. As fewer psychosocial intervention studies have focused on managers, and instead included subordinates or complete work units, future research should ideally include a larger number of managers to allow for a fine-grained analysis of different organizational levels, the managers' perceptions of their work environment, the implementation process including outcomes affected by specific workshop mechanisms, and additional time points. Long-term collaborations with organizations are needed to implement, evaluate and repeatedly adjust interventions to a specific organizational context and develop a sustainable psychosocial work environment.

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REFERENCES

Abrahamsson, L., & Johansson, J. (2013). One hundred years of inertia: An exposé of the concept of the psychosocial work environment in Swedish policy and research. *Nordic Journal of Working Life Studies, 3*(1), 5–29.

AFS. (2001). *AFS 2001:1. Systematic work environment management: Provisions of the Swedish Work Environment Authority on systematic work environment management, together with general recommendations on the implementation of the provisions*. Stockholm: The Swedish Work Environment Authority.

AFS. (2015). *AFS 2015:4. Organizational and social work environment: The Swedish Work Environment Authority provisions on organizational and social work environment, with general recommendations on application thereof*. Stockholm: The Swedish Work Environment Authority.

Alarcon, G. M. (2011). A meta-analysis of burnout with job demands, resources, and attitudes. *Journal of Vocational Behavior, 79*(2), 549–562. doi:10.1016/j.jvb.2011.03.007

Anderzén, I., & Arnetz, B. B. (2005). The impact of a prospective survey-based workplace intervention program on employee health, biologic stress markers, and organizational productivity. *Journal of Occupational and Environmental Medicine, 47*(7), 671–682. doi:10.1097/01.jom.0000167259.03247.1e

Aronsson, G., Bejerot, E., & Härenstam, A. (2012). Onödiga och oskäliga arbetsuppgifter bland läkare: Samband mellan illegitima arbetsuppgifter och stress kartlagt i enkätstudie. *Läkartidningen, 48*(109), 2216–2219.

Bailey, C., Madden, A., Alfes, K., & Fletcher, L. (2015). The meaning, antecedents and outcomes of employee engagement: A narrative synthesis. *International Journal of Management Reviews, 19*, 31–53. doi:10.1111/ijmr.12077

Bakker, A. B., & Demerouti, E. (2007). The job demands-resources model: State of the art. *Journal of Managerial Psychology, 22*(3), 309–328. doi:10.1108/02683940710733115

Bakker, A. B., Demerouti, E., & Euwema, M. C. (2005). Job resources buffer the impact of job demands on burnout. *Journal of Occupational Health Psychology, 10*(2), 170–180. doi:10.1037/1076-8998.10.2.170

Bakker, A. B., Hakanen, J. J., Demerouti, E., & Xanthopoulou, D. (2007). Job resources boost work engagement, particularly when job demands are high. *Journal of Educational Psychology, 99*, 274–284. doi:10.1037/0022-0663.99.2.274

Beehr, T. A., Walsh, J. T., & Taber, T. D. (1976). Relationships of stress to individually and organizationally valued states: Higher order needs as a moderator. *Journal of Applied Psychology, 61*(1), 41–47.

Brauchli, R., Schaufeli, W. B., Jenny, G. J., Füllemann, D., & Bauer, G. F. (2013). Disentangling stability and change in job resources, job demands, and employee well-being: A three-wave study on the Job-Demands Resources model. *Journal of Vocational Behavior, 83*, 117–129. doi:10.1016/j.jvb.2013.03.003

Caplan, R. D. (1971). *Organizational stress and individual strain: A social-psychological study of risk factors in coronary heart diseases among administrators, engineers, and scientists*. Ann Arbor, MI: Institute for Social Research, University of Michigan, University Microfilms No. 72/14822.

Day, A., & Randell, K. D. (2014). Building a foundation for psychologically healthy workplaces and well-being. In A. Day, E. K. Kelloway, & J. J. Hurrell Jr (Eds.), *Workplace well-being: How to build psychologically healthy workplaces* (pp. 3–25). Sussex: Wiley.

Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology, 86*(3), 499–512.

EEC. (1989). *1989/391/EEC. Council Directive of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health of workers at work*. Brussels: European Union. Retrieved from https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:31989L0391&from=EN

Eklöf, M., Pousette, A., Dellve, L., Skagert, K., & Ahlborg, G., Jr. (2010). *Utveckling av ett variations- och förändringskänsligt frågeinstrument för mätning av stressorexponering, copingbeteende och copingresurser bland 1:A och 2:a linjens chefer inom offentlig vård och omsorg*. Institutet för stressmedicin, Göteborg: ISM-rapport 2010:7.

Falkenberg, H., Näswall, K., Lindfors, P., & Sverke, M. (2015). Working in the same sector, in the same organization and in the same occupation: Similarities and differences between women and men physicians' work climate and health complaints. *Nordic Journal of Working Life Studies, 5*(4), 67–84. doi:10.19154/njwls.v5i4.4844

Frick, K. (2013). Work environment dialogue in a Swedish Municipality — Strengths and limits of the nordic work environment model. *Nordic Journal of Working Life Studies, 3*(1), 69–93.

Fried, Y., Shirom, A., Gilboa, S., & Cooper, C. L. (2008). The mediating effects of job satisfaction and propensity to leave on role stress–job performance relationships: Combining meta-analysis and structural equation modeling. *International Journal of Stress Management, 15*(4), 305–328. doi:10.1037/a0013932

Gottfredson, L. S. (1997). Why g matters: The complexity of everyday life. *Intelligence, 24*(1), 79–132.

Göransson, S., Näswall, K., & Sverke, M. (2009). Work-related health attributions: Their impact on work attitudes. *International Journal of Workplace Health Management, 2*(1), 6–21. doi:10.1108/17538350910945974

Hackman, J. R., & Oldham, G. R. (1975). Development of the job diagnostic survey. *Journal of Applied Psychology, 60*(2), 159–170.

Hassard, J., Teoh, K., Cox, T., Dewe, P., Cosmar, M., Gründler, R., … Van den Broek, K. (2014). *Calculating the cost of work-related stress and psychosocial risks: European risk observatory: Literature review*. Luxembourg: Publications Office of the European Union.

Heller, F., Pusic, E., Strauss, G., & Wilpert, B. (2004). *Organizational participation myth and reality*. New York, NY: Oxford University Press.

Härenstam, A., & MOA Research Group (2005). Different development trends in working life and increasing occupational stress require new work environment strategies. *Work, 24*(3), 261–277.

Karasek, R. A. (1979). Job demands, job decision latitude, and mental strain: implications for job redesign. *Administrative Science Quarterly, 24*, 285–311.

Karasek, R., Brisson, C., Kawakami, N., Houtman, I., Bongers, P., & Amick, B. (1998). The Job Content Questionnaire (JCQ): An instrument for internationally comparative assessments of psychosocial job characteristics. *Journal of Occupational Health Psychology, 3*(4), 322–355.

Karasek, R. A., & Theorell, T. (1990). *Healthy work: Stress, productivity and the reconstructions of working life*. New York, NY: Basic Books.

Kelloway, E. K., & Barling, J. (2010). Leadership development as an intervention in occupational health psychology. *Work & Stress, 24*(3), 260–279.

Kelloway, E. K., & Day, A. L. (2005). Building healthy workplaces: Where we need to be. *Canadian Journal of Behavioural Science, 37*(4), 309–312.

Kristensen, T. S. (2005). Intervention studies in occupational epidemiology. *Occupational and Environmental Medicine, 62*(3), 205–210.

Larsson, G., Sandahl, C., Söderhjelm, T., Sjövold, E., & Zander, A. (2017). Leadership behavior changes following a theory-based leadership development intervention: A longitudinal study of subordinates' and leaders' evaluations. *Scandinavian Journal of Psychology, 58*, 62–68. doi:10.1111/sjop.12337

Lee, C. K., & Strang, D. (2006). The international diffusion of public-sector downsizing: Network emulation and theory-driven learning. *International Organization, 60*, 883–910. doi:10.1017/S0020818306060292

Little, R. J. A., & Rubin, D. B. (1989). The analysis of social science data with missing values. *Sociological Methods and Research, 18*(2 & 3), 292–326.

Ljungblad, C., Granström, F., Dellve, L., & Åkerlind, I. (2014). Workplace health promotion and working conditions as determinants of employee health. *International Journal of Workplace Health Management, 7*(2), 89–104. doi:10.1108/IJWHM-02-2013-0003

Lohela, M., Björklund, C., Vingård, E., Hagberg, J., & Jensen, I. (2009). Does a change in psychosocial work factors lead to a change in employee health? *Journal of Occupational and Environmental Medicine, 51*, 195–203. doi:10.1097/JOM.0b013e318192bd2c

Lohela-Karlsson, M., Hagberg, J., & Bergström, G. (2014). Production loss among employees perceiving work environment. *International Archives of Occupational and Environmental Health*. Retrieved from https://link-springer-com.ezp.sub.su.se/article/10.1007/s00420-014-1003-0

McQueen, R. A., & Knussen, C. (2006). *Introduction to research methods and statistics in psychology*. Essex: Pearson Education.

Michie, S., & Williams, S. (2003). Reducing work related psychological ill health and sickness absence: A systematic literature review. *Occupational and Environmental Medicine, 60*(1), 3–9.

Nahrgang, J. D., Morgeson, F. P., & Hofmann, D. A. (2011). Safety at work: A meta-analytic investigation of the link between job demands, job resources, burnout, engagement, and safety outcomes. *Journal of Applied Psychology, 96*(1), 71–94. doi:10.1037/a0021484

Nielsen, K., & Randall, R. (2012). The importance of employee participation and perceptions of changes in procedures in a teamworking intervention. *Work & Stress, 26*(2), 91–111.

Nielsen, K., Randall, R., Holten, A.-L., & González, E. R. (2010). Conducting organizational-level occupational health interventions: What works? *Work & Stress, 24*(3), 234–259. doi:10.1080/02678373.2010.515393

Noe, R. A., & Tews, M. J. (2014). Employee development and growth. In A. Day, E. K. Kelloway, & J. J. Hurrell (Eds.), *Workplace well-being how to build psychologically healthy workplaces* (pp. 142–160). Sussex: Wiley.

Nunnally, J. C. (1978). *Psychometric theory*. New York, NY: McGraw-Hill.

Nyberg, A., Leineweber, C., & Magnusson Hanson, L. (2015). Gender differences in psychosocial work factors, work–personal life interface, and well-being among Swedish managers and non-managers. *International Archives of Occupational and Environmental Health, 88*, 1149–1164. doi:10.1007/s00420-015-1043-0

Näswall, K., Sverke, M., & Göransson, S. (2014). Is work affecting my health? Appraisals of how work affects health as a mediator in the relationship between working conditions and work-related attitudes. *Work & Stress, 28*(4), 342–361. doi:10.1080/02678373.2014.959092

OECD. (2014). *OECD Employment Outlook 2014, How good is your job? Measuring and assessing job quality*. Retrieved from https://www.oecd.org/employment/oecdemploymentoutlook.htm

Peterson, R. A. (1994). A meta-analysis of cronbach's coefficient alpha. *Journal of Consumer Research, 21*, 381–391.

Petterson, I. L., Hertting, A., Hagberg, L., & Theorell, T. (2005). Are trends in work and health conditions interrelated? A study of Swedish hospital employees in the 1990s. *Journal of Occupational Health Psychology, 10*(2), 110–120. doi:10.1037/1076-8998.10.2.110

Richardson, K. M., & Rothstein, H. R. (2008). Effects of occupational stress management intervention programs: A meta-analysis. *Journal of Occupational Health Psychology, 13*(1), 69–93. doi:10.1037/1076-8998.13.1.69

Rizzo, J. R., House, R. J., & Lirtzman, S. I. (1970). Role conflict and ambiguity in complex organizations. *Administrative Science Quarterly, 15*(2), 150–163.

Romanowska, J., Larsson, G., Eriksson, M., Wikström, B. M., Westerlund, H., & Theorell, T. (2011). Health effects on leaders and co-workers of an art-based leadership development program. *Psychotherapy and Psychosomatics, 80*(2), 78–87. doi:10.1159/000321557

Saber, D. A. (2014). Frontline registered nurse job satisfaction and predictors over three decades: A meta-analysis from 1980 to 2009. *Nursing Outlook, 62*(6), 402–414. doi:10.1016/j.outlook.2014.05.004

Semmer, N. K., Jacobshagen, N., Meier, L. L., Elfering, A., Beehr, T. A., Kälin, W., & Tschan, F. (2015). Illegitimate tasks as a source of work stress. *Work & Stress, 29*(1), 32–56. doi:10.1080/02678373.2014.1003996

Semmer, N. K., Tschan, F., Meier, L. L., Facchin, S., & Jacobshagen, N. (2010). Illegitimate tasks and counterproductive work behavior. *Applied Psychology, 59*(1), 70–96. doi:10.1111/j.1464-0597.2009.00416.x

SFS. (1977). *SFS 1977:1160. Work Environment Act*. Stockholm: Government Offices of Sweden.

Sverke, M., & Sjöberg, A. (1994). Dual commitment to company and union in Sweden: An examination of predictors and taxonomic split methods. *Economic and Industrial Democracy, 15*, 531–564.

Theorell, T., Emdad, R., Arnetz, B., & Weingarten, A. (2001). Employee effects of an educational program for managers at an insurance company. *Psychosomatic Medicine, 63*, 724–733.

Theorell, T., Hammarström, A., Aronsson, G., Bendz, L. T., Grape, T., Hogstedt, C., … Hall, C. (2015). A systematic review including meta-analysis of work environment and depressive symptoms. *BMC Public Health, 15*(1), 1–14. doi:10.1186/s12889-015-1954-4

Trydegård, G.-B. (2012). Care work in changing welfare states: Nordic care workers' experiences. *European Journal of Ageing, 9*, 119–129.

Van der Klink, J. J. L., Blonk, R. W. B., Schene, A. H., & Van Dijk, F. J. H. (2001). The benefits of interventions for work-related stress. *American Journal of Public Health, 91*(2), 270–276.

Walsh, J. T., Taber, T. D., & Beehr, T. A. (1980). An integrated model of perceived job characteristics. *Organizational Behavior and Human Performance, 25*, 252–267.

Williams-Whitt, K., White, M. I., Wagner, S. L., Schultz, I. Z., Koehn, C., Dionne, C. E., … Wright, M. D. (2015). Job demand and control interventions: A stakeholder-centered best-evidence synthesis of systematic reviews on workplace disability. *International Journal of Occupational and Environmental Medicine, 6*(2), 61–78.

Wrzesniewski, A., & Dutton, J. E. (2001). Crafting a job: Revisioning employees as active crafters of their work. *Academy of Management Review, 26*(2), 179–201.

Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2007). The role of personal resources in the job demands-resources model. *International Journal of Stress Management, 14*(2), 121–141.

