

The long arm of the job – work characteristics and recovery windows in social welfare work

Long arm
of the job

15

Gunnar Aronsson

Department of Psychology, Stockholm University, Stockholm, Sweden

Eva Charlotta Nylén

*Division of Work and Organizational Psychology,
Stockholm University, Stockholm, Sweden*

Lars Ishall

*School of Education and Communication,
Jönköping University, Jönköping, Sweden*

Petra Lindfors

Department of Psychology, Stockholm University, Stockholm, Sweden, and

Magnus Sverke

*Department of Psychology, Stockholm University, Stockholm, Sweden and
North-West University, Vanderbijlpark, South Africa*

Received 2 November 2017

Revised 10 April 2018

4 October 2018

Accepted 6 November 2018

Abstract

Purpose – Social welfare work contains elements that may be difficult for employees to put out of their minds when the working day ends, which may affect the recovery. The purpose of this paper is to analyze the length of recovery in relation to different work characteristics and to two types of welfare work.

Design/methodology/approach – All 1,365 employees, excluding managers, of two municipality administrations were invited to a survey study. Of these, 673 (49 percent) responded. After adjusting for partial missing, the effective sample included 580 employees (43 percent). Retrospective ratings of four recovery windows were analyzed: recovery after one night's sleep, weekends, shorter holidays and vacations.

Findings – Employees with a university education were less recovered than those with a shorter education. For those with a university education, the long arm of the job mainly involved failures regarding qualitative job demands (task difficulty). For those with a shorter education, quantitative job demands (too much to do) were most prominent for their prolonged recovery. Feedback from managers had consistent and positive associations with all four recovery windows among employees with a university education, but not among those with a shorter education for whom instead having too much to do and social support had significant spillover effects.

Originality/value – The identified differences may relate to employees with a university education having more problem-solving tasks, which may result in a higher need of work-related feedback but also in difficulties detaching from work. Thus, education and job characteristics have differential associations with self-rated recovery.

Keywords Stress, Workplace health, Health promotion, Occupational health and safety, Recovery, Welfare work

Paper type Research paper

Employees' opportunities for rest, recovery and recreation have been a central topic in the ongoing struggle to improve working hours that has characterized many industrialized countries during the past 200 years. In the mid-1900s, the right to paid vacation appeared on



The study makes use of data from the project, "The manager, the mission and the work environment: Interventions for improving workplaces and organizations", which was supported by a grant from AFA Insurance (Ref. No. 090325). This research was carried out within the Stockholm Stress Center, a center of excellence supported by funding from the Swedish Research Council for Health, Working Life and Welfare (FORTE).

International Journal of Workplace

Health Management

Vol. 12 No. 1, 2019

pp. 15-27

© Emerald Publishing Limited

1753-8351

DOI 10.1108/IJWHM-11-2017-0089

the political agenda, also based on arguments concerning the protection of employees' opportunities for recovery. Today, the eight-hour working day and the five-day working week is the standard model in many industrialized countries. These regulations are considered to guarantee employees sufficient time for rest and recreation and are assumed to work rather well. Employees with similar working hour agreements are assumed to have the same opportunities for recovery and similar access to energy to use in their free time. But is recovery only a question of working hours? Does the recovery period needed vary in length in relation to different job characteristics? In a study of the relationships between work and leisure, Meissner (1971) used the metaphor "the long arm of the job" to emphasize the relationship between job characteristics and recovery. In this study, we revive this illustrative metaphor in researching welfare occupations, which contain ethical dilemmas and uncertainty, emotional demands and clients in need of help and assistance, that is, job components that may be difficult to put out of one's mind when the working day is over and which consequently may delay or hinder recovery (Aronsson *et al.*, 2014).

Recovery has been argued relevant for understanding stress-related health problems (McEwen, 1998; Sonnentag and Bayer, 2005). Ideally, periods of high activity, including stress and strain of mental and bodily resources, are to be followed by time for rest and recovery. This means that periods of work should be balanced by non-work periods allowing rest and recovery from work. During a working day people meet and have to deal with different types of demands including emotional, cognitive and physical demands. This requires mental and physical energy and resources. Typically, the end of a working day is characterized by reduced energy levels and experiences of fatigue, meaning that individual resources can be depleted (Sonnentag and Zijlstra, 2006). However, if resources are replenished through recovery, an individual is prepared for another day of work. When a period of rest eliminates fatigue, the cycle of work and rest is balanced. But if recovery periods are too short, or unwinding is hindered, fatigue is likely to accumulate. Over time, such an accumulated fatigue increases the risk for different stress-related health problems (McEwen, 1998).

Much of the research on recovery and work has come to focus on micro-breaks (e.g. Kim *et al.*, 2018), while less is known of job characteristics and with the existing empirical findings being mixed (Sonnentag *et al.*, 2017). Reviews (Zijlstra and Sonnentag, 2006; cf. Sonnentag *et al.*, 2017) have mentioned three job characteristics that are related to unwinding and recovery: intensive working conditions seem to be related to more difficulties unwinding; individuals with autonomous work have greater opportunities to regulate their own work speed and efforts spent at work, which may prevent depletion of resources during the working day; high levels of responsibility may be strenuous, and thus involve a greater need for recovery is greater.

To understand the linkages between various job characteristics and recovery, other factors have to be considered as well. Psychological detachment, which refers to the mental disengagement from the job when away from work, has been identified as a key factor and an important prerequisite for daily recovery and long-term well-being (Sonnentag and Fritz, 2015). Specifically, both quantitative job demands (e.g. longer working hours, time pressure and a high workload) and qualitative job demands (e.g. decision-making demands, cognitive demands and work complexity, role conflict and role ambiguity) have been associated with a lack of detachment (Sonnentag and Fritz, 2015; Sonnentag *et al.*, 2017). Additional research shows the importance of goal clarity and goal completion for detachment (Smit, 2016; see also Sonnentag *et al.*, 2017). Poor or lacking clarity typically generates incomplete work goals, which in turn hinders detachment from work. For the current study, this perspective is of special interest since some types of social welfare work seem characterized by contradictory goals and ethical dilemmas (Mattison, 2000).

Despite insufficient unwinding and poor recovery having been identified as risk factors, few systematic studies have investigated the length of recovery periods needed in relation to

different job characteristics, while also taking into account occupational level in terms of education. Longer periods of leave have mainly been investigated in studies of vacation. These studies typically investigate effects of the vacation break when back at work again. The results from these studies repeatedly show that individuals' self-rated situation following a period of leave is positive but mostly the effects fade out quite quickly (de Bloom *et al.*, 2009, 2010; de Bloom, 2015; Sonnentag *et al.*, 2017). While the vacation studies mainly have ignored the recovery needed in relation to the pre-vacation work situation, this research provides knowledge and hypotheses of psychological mechanisms involved in recovery during vacations. Such knowledge (de Bloom *et al.*, 2010) regarding passive (release from job demands) and active mechanisms (engagement in self-selected and pleasant activities) may also be relevant for post work studies of recovery. Specifically, there seems to be a variation relating to vacation content and individual autonomy and feelings during the vacation.

This study investigated welfare work and recovery from the perspective of job demands and job resources (Demerouti *et al.*, 2001; Sonnentag and Zijlstra, 2006). Job demands refers to such characteristics of the job that require sustained effort and thus tax individuals' energy levels. Job resources include factors that help people to manage their work and to finalize their work tasks and thus promote recovery. Resources such as high job autonomy involve possibilities to control the exposure to job demands to a certain degree by, for instance, allowing individuals to determine when to take a break or switch between different job tasks. In this way autonomy may prevent fatigue and decrease the need for recovery (Sonnentag and Zijlstra, 2006; Sonnentag *et al.*, 2017). However, depending on the type of welfare work, different resources can be assumed to have different positive effects on recovery.

We address resources and demands in relation to different recovery windows. These recovery windows refer to real existing breaks when work is neither required nor expected. Working life includes formally regulated and informal recovery windows: at a micro level (breaks during working days), at a meso-level (daily rest and sleep between working days or work shifts) and at a macro level (weekends, shorter holidays and vacations) (Aronsson *et al.*, 2003). Previous research on detachment and recovery which distinguishes between short-term and long-term recovery dynamics and processes, suggests that short-term dynamics operate within longer-term dynamics in as much as short-term processes are nested within longer-term processes (Sonnentag and Fritz, 2015). This means that psychological detachment from work can be described within different time frames including days, weeks or years.

Existing research (Aronsson and Gustafsson, 2005) on longer recovery periods and job characteristics in a representative sample based on Sweden's regular labor-market surveys ($n = 2,536$) shows that 15 percent reported not being rested/recovered when returning to work following several weeks of leave (e.g. a macro-break). Among those not recovered, 36 percent reported lack of resources, which is to be compared with 9 percent among the recovered. Another study of teachers ($n = 472$) investigated recovery at the meso-level (evening rests and one night's sleep) and identified three distinct cluster groups, namely, the alert, those in-between and the non-recovered (Aronsson *et al.*, 2003). The non-recovered, which included about 20 percent with failure to recover, reported less satisfaction with their own work, compared to the other cluster groups. Research on welfare work ($n = 195$), based on cluster analyses of ratings of tiredness during work and five recovery windows (meso and macro), showed a clear association between job characteristics and recovery. Specifically, 32 percent of the non-recovered group reported that they had adequate resources to perform their job satisfactorily, as compared to 87 percent in the recovered group (Aronsson *et al.*, 2014).

The present study focused on welfare workers, a group carrying out a societal mission aiming to contribute to the prosperity, health care and good socialization of citizens.

Welfare workers have to make decisions, which in some cases can have thorough short-term and long-term effects on the lives of other people. The work involves dilemmas, uncertainty, trade-offs and feelings of being unable to provide the support that is perhaps considered necessary (Tham and Meagher, 2009; Aronsson *et al.*, 2014). This means that welfare work contains elements that the employees may find difficult to put out of their minds when the working day has ended, meaning that the work can follow the employees into their non-working time and thus affect their recovery (Aronsson *et al.*, 2014).

Depending on organizational factors and work characteristics, the mission of welfare work may be more or less adequately fulfilled, which in turn has consequences for employee unwinding and need for recovery. Welfare work may be divided in relation to its job content and forms of job concreteness. One type of welfare work includes the regular everyday services to old people and specific assistance to others in need of help in their daily living. This work involves duties with relatively clear starting points and points of completion. Also, the level of service is often prescribed, which facilitates goal completion. Another type of welfare work without such clear time and task completion is the work that forms the basis for decisions, regarding for instance, custody disputes, child custody decisions, financial support, help and support to local citizens, community action plans, budget and policy. Here, the work goals can be assumed to be of a more incomplete character, which has implications for detachment and recovery (Sonnentag and Fritz, 2015; Smit, 2016; Sonnentag *et al.*, 2017).

The aim of this study was to investigate need for recovery in relation to job characteristics and to two types of welfare work. As for different types of welfare work, the work was stratified and dichotomized according to length of education, which is assumed to a relatively high degree reflect the two types of work at an aggregate level. The study can be characterized as explorative but is based on a general job demands–resources model. The research question was formulated as follows:

RQ1. How do job resources along with quantitative and qualitative job demands relate to recovery and recovery delays for two types of welfare work?

Method

Setting

The present study included municipal welfare workers, in two municipalities with about 40,000 inhabitants in the southern Sweden. Welfare and social service work is performed by many different professions. The tasks and job content are largely determined by the level of education and differ substantially between different groups of employees. Our sample is numerically too small for separate analyses of different professions; instead, we have stratified the sample in relation to the level of education. Generally, this means that the group with a shorter education to a large extent includes employees who in their daily work are in close contact with clients and caretakers (e.g. employees in home care and services to the elderly and people with various forms of disabilities), and include occupations such as home care workers, auxiliary nurses and personal assistants. The stratum with a university education includes occupations such as various types of social workers and administrators. Typically, these employees are involved in investigative and complex work, mostly performed in an office, and include contact with clients, for instance, regarding investigations on family problems, child abuse, child custody matters and decisions on financial support and other forms of support.

Data collection

Information meetings were held with managers and human resources staff in the two municipalities, who in turn informed the staff about the study. E-mail invitations were sent from the research team and included information on the purpose of the research project also

clarifying that participation in the study was voluntary, information about protection of the confidentiality of respondents, a description of the research team and an individual link to the web survey (Lime Survey), which is a commonly used cost-efficient method of collecting self-reports from a larger sample. Three reminders were e-mailed to participants. The research was carried out in line with the Helsinki Declaration and was also approved by the Regional Ethics Committee in Stockholm (Ref. No. 2010/1517-31/5).

All 1,365 employees, excluding managers, of the two administrations were invited to participate in the survey. Of these, 673 (49.3 percent) responded. A total of 93 individuals did not provide information regarding their education ($n = 4$) or had missing data on all recovery items ($n = 89$), thus resulting in an effective sample of 580 employees (42.6 percent). An analysis of non-responses showed no differences in demographic characteristics (age, gender and education) between respondents and non-respondents. After missing completely at random (MCAR) tests were found non-significant, that is, values were MCAR (Tabachnick and Fidell, 2014), imputation of missing values in job demands and job resources variables (typically not exceeding 5 percent) was carried out by the EM imputation method (Little and Rubin, 1987). The mean age of the sample was 47 years and 86 percent were women. For the analyses, the sample was divided into groups with a university education ($n = 320$; 55 percent) or a shorter education ($n = 260$; 45 percent). The high proportion of women did not allow for stratification on gender.

Measures

Unless otherwise specified, respondents were asked to provide ratings on a five-point scale with higher values indicating more of the attribute in question. These specific self-report measures were included since they are established measures of job resources, job demands and recovery. Bivariate correlations between study variables, separately for the two groups with different educational levels, are presented in Table I. Table I also provides reliability estimates for all multi-item measures. Overall, the Cronbach's α coefficients were above 0.70 and considered acceptable.

Job resources. To measure job control, a four-item scale that reflects the degree of autonomy and influences over how work tasks are performed was used (Sverke and Sjöberg, 2000). Goal clarity was measured with four questions (Rizzo *et al.*, 1970). A four-item measure (Hackman and Oldham, 1975) was used to assess feedback from the manager. The social support scale includes five questions (Kinsten *et al.*, 2007), measuring the degree of support employees get at their workplaces.

Job demands. Quantitative job demands were measured with three items that reflect the feeling of having too much to do in the time available (Walsh *et al.*, 1980). Qualitative job demands were assessed with a four-item index reflecting difficulty of work tasks (Sverke *et al.*, 1999). Illegitimate tasks were measured with two indexes: unnecessary tasks (five items) and unreasonable tasks (four items) (Semmer *et al.*, 2010; Aronsson *et al.*, 2012).

Recovery. The four recovery questions have been validated (Aronsson *et al.*, 2003; Gustafsson *et al.*, 2008) and focus on recovery windows of varied length (in the morning; after a weekend; after a shorter vacation; after several weeks of vacation).

Demographic control variables. Gender was assessed using a dichotomous measure (0 = man, 1 = woman). Age was measured in years.

Statistical analyses

To investigate group differences relating to education, we compared the groups with a university education and a shorter education, respectively, regarding demographic characteristics, job resources, job demands and recovery using χ^2 tests (for gender) and t -tests for independent samples (for all other measures). To study the relative importance

Table I.
Pearson correlation coefficients for groups with a shorter education (below the diagonal) and a university education (above the diagonal); Cronbach's α s in the diagonal (in italics)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
<i>Demographic control variables</i>														
1 Gender (woman)	-													
2 Age	0.10	-												
<i>Job resources</i>														
3 Job control	-0.06	0.02	(0.68)	0.34	0.26	0.31	-0.19	-0.30	-0.32	-0.31	0.30	0.33	0.27	0.26
4 Goal clarity	0.12	0.08	0.28	(0.81)	0.16	0.33	-0.29	-0.44	-0.30	-0.38	0.33	0.33	0.27	0.23
5 Social support	0.00	0.05	0.38	0.33	(0.87)	0.20	-0.21	-0.27	-0.24	-0.31	0.19	0.24	0.21	0.22
6 Feedback from manager	-0.05	-0.06	0.26	0.47	0.32	(0.83)	-0.12	-0.23	-0.17	-0.17	0.25	0.25	0.23	0.23
<i>Job demands</i>														
7 Quantitative job demands	0.12	0.10	-0.16	-0.16	-0.14	-0.22	(0.77)	0.52	0.28	0.50	-0.42	-0.34	-0.31	-0.19
8 Qualitative job demands	0.03	-0.01	-0.24	-0.25	-0.22	-0.23	0.48	(0.70)	0.28	0.55	-0.44	-0.42	-0.38	-0.29
9 Unnecessary tasks	-0.06	-0.16	-0.21	-0.28	-0.37	-0.21	0.21	0.37	(0.86)	0.53	-0.19	-0.22	-0.23	-0.17
10 Unreasonable tasks	0.02	-0.08	-0.20	-0.21	-0.24	-0.16	0.39	0.63	0.45	(0.81)	-0.35	-0.37	-0.33	-0.22
<i>Recovery</i>														
11 Recovered in the morning	-0.01	0.18	0.26	0.23	0.31	0.14	-0.44	-0.40	-0.32	-0.35	-	0.77	0.65	0.48
12 Recovered after a week-end	0.04	0.16	0.29	0.31	0.36	0.21	-0.37	-0.35	-0.30	-0.28	0.75	-	0.79	0.60
13 Recovered after a shorter vacation	0.04	0.10	0.24	0.28	0.32	0.18	-0.32	-0.33	-0.29	-0.26	0.67	0.80	-	0.77
14 Recovered after a long vacation	0.06	0.11	0.16	0.27	0.23	0.12	-0.25	-0.25	-0.21	-0.19	0.51	0.66	0.82	-

Notes: -, not applicable. Significance levels: shorter education ($n = 260$): for $r \geq 0.14$, $p < 0.05$; $r \geq 0.16$, $p < 0.01$; $r \geq 0.20$, $p < 0.001$. University education ($n = 320$): for $r \geq 0.11$, $p < 0.05$; $r \geq 0.15$, $p < 0.01$; $r \geq 0.18$, $p < 0.001$

of demographic control variables, job resources and job demands for recovery, we performed hierarchical multiple regression analyses. All analyses were performed using SPSS version 22.

Results

Results of the analyses comparing groups of individuals with a shorter education and a university education, respectively, are reported in Table II which shows that the group with a university education had lower mean values in two of the job resources (less goal clarity and less feedback from manager) and significantly higher mean values in all four job demands, as compared to the group with a shorter education. Employees with a shorter education were significantly more rested and recovered when starting work in the morning, after a weekend and after a short vacation, but there was no significant group difference regarding recovery experiences after a longer vacation. Additionally, there were no significant differences regarding mean age and gender (see Table II for mean values for all study variables for each group).

Results of the hierarchical multiple regression analyses for predicting the four recovery windows are found in Table III. Overall, the demographic variables entered in the first step accounted for significant proportions of the variance in experiences of recovery in the morning and after a weekend, both in individuals with a shorter education (3 percent) and among those with a university education (6–7 percent). Despite demographics accounting for 2 percent of the variance in recovery after a short vacation among employees with a university education, these variables did generally not explain any significant amount of the variance in recovery experiences after shorter or longer vacations. Older age was positively related to more short-term recovery experiences. Gender did not predict of any of the recovery experiences.

Variable	Shorter education		University education		Difference ^a χ^2/t
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
<i>Demographic control variables</i>					
Gender (woman)	0.85	–	0.89	–	1.62
Age	47.32	11.03	47.72	10.69	–0.43
<i>Job resources</i>					
Job control	3.65	0.79	3.72	0.74	–1.06
Goal clarity	4.31	0.75	3.86	0.92	6.38***
Social support	3.28	0.55	3.22	0.53	1.30
Feedback from manager	3.54	0.98	3.31	0.98	2.74**
<i>Job demands</i>					
Quantitative job demands	2.60	1.02	2.99	1.06	–4.47***
Qualitative job demands	1.85	0.77	2.09	0.81	–3.65***
Unnecessary tasks	2.34	0.78	2.51	0.74	–2.64**
Unreasonable tasks	2.07	0.67	2.26	0.65	–3.33***
<i>Recovery</i>					
Recovered in the morning	3.67	1.02	3.47	1.00	2.29*
Recovered after a weekend	4.05	0.94	3.76	0.99	3.64***
Recovered after a shorter vacation	4.26	0.83	4.06	0.93	2.67**
Recovered after a long vacation	4.49	0.73	4.39	0.79	1.58

Notes: –, not applicable. Shorter education ($n = 260$), university education ($n = 320$). The response scale for all job demands, job resources and recovery measures ranged from 1 to 5. ^aDegrees of freedom: χ^2 (gender: $df = 1$) and t -tests (remaining variables: $df = 578$). * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table II.
Descriptive statistics and tests for differences in study variables, between groups with a shorter education and a university education

Table III.
Results of hierarchical multiple regressions predicting recovery, with stratification on education (standardized regression coefficients)

	Short education Recovered in/after			University education Recovered in/after		
	... the morning	... weekend	... short vacation	... the morning	... weekend	... short vacation
<i>Demographic control variables</i>						
Gender (woman)	0.01	0.04	0.05	0.02	0.04	-0.03
Age	0.18***	0.16**	0.08	0.17***	0.17***	0.08
R ²	0.03*	0.03*	0.01	0.06***	0.06***	0.02*
<i>Job resources</i>						
Job control	0.08	0.10	0.05	0.14**	0.16**	0.08
Goal clarity	0.06	0.13*	0.19	0.08	0.08	0.05
Social support	0.16**	0.20**	0.18**	0.03	0.07	0.11
Feedback from manager	-0.07	-0.03	-0.04	0.11*	0.11*	0.12*
ΔR ²	0.12***	0.18***	0.14***	0.16***	0.18***	0.13***
<i>Job demands</i>						
Quantitative job demands	-0.34***	-0.27***	-0.21***	-0.21***	-0.10*	-0.10
Qualitative job demands	-0.14*	-0.13	-0.14	-0.18**	-0.17**	-0.18**
Unnecessary tasks	-0.08	-0.05	-0.09	0.07	0.05	-0.04
Unreasonable tasks	-0.03	0.04	-0.03	-0.05	-0.10	-0.06
ΔR ²	0.19***	0.11***	0.09***	0.10***	0.06***	0.06***
Tot R ²	0.34***	0.31***	0.24***	0.32***	0.30***	0.21***

Notes: Shorter education ($n = 260$), university education ($n = 320$). * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

The job resources entered in the second step of the regressions accounted for additional variance in all recovery experiences, with the proportions ranging from 9 to 18 percent. Job control was not significantly related to recovery in the group with a shorter education, whereas it was positively associated with two of the recovery experiences (the exceptions being after a shorter or longer vacation) among those with a university education. Goal clarity was positively related to experiences of recovery after a weekend and after a long vacation among those with a shorter education, while there was no significant relationship for the group with a university education. Social support had positive associations with all experiences of recovery, except feelings of recovery after a long vacation in the group with a shorter education. However, there were no statistically significant relationships at all in the group with a university education. Feedback from manager did not predict recovery among employees with a shorter education, while there were consistent and positive relationships with all recovery experiences in the group with a university education.

The block of job demands, entered in the last step, accounted for additional units of variance in all recovery experiences in both educational groups, aside from feeling recovered after a long vacation in the group with a university education. Quantitative job demands had moderately strong negative associations with all four types of recovery in the group with a shorter education, but only predicted experiences of recovery in the morning and after a weekend among those with a university education. Qualitative job demands were not related to recovery in the group with a shorter education, but negatively related to all four types of recovery in the group with a university education. For the two dimensions of illegitimate tasks (i.e. unnecessary and unreasonable tasks), there were no significant relationships to any of the recovery windows in neither of the educational groups (Table III).

Summary and discussion

This study made use of the concept of recovery windows to investigate breaks that exist in the real life of employees, that is, a night's rest, a weekend, a shorter vacation and a longer vacation. The experiences of these four recovery windows are based on employees' self-ratings but also reflect organizational arrangements, which may be useful when looking for practical ways of preventing poor recovery and its negative health consequences (cf. Aronsson *et al.*, 2014; Sonnentag *et al.*, 2017). In this study, welfare workers were stratified into groups with shorter and longer (university) education, which reflect different work content and also different occupations. Overall, the results showed that those with a university education were less rested and recovered than those with a shorter education.

The job characteristics predicting recovery varied between groups. In the group with a university education, the negative recovery situation and differences were related to qualitative job demands while among those with a shorter education quantitative job demands were mainly related to insufficient recovery. In the group with a university education, feedback from the manager regarding employee performance acted as the long arm of the job and was associated with better recovery. However, this was not the case in the group with a shorter education for whom social support was the job resource which had consistent and positive spillover effects. The support measure covers support from colleagues and the workplace atmosphere but not from managers (Kinsten *et al.*, 2007). The different predictors in the two educational groups may reflect the fact that the work of employees with a university education requires more of problem-solving and complex tasks, which in turn involves higher needs for job-related feedback. A lack of feedback may be related to unfulfilled work tasks and work goals, which, in turn, may lead to rumination around work problems and difficulties to detach from work (Sonnentag and Fritz, 2015; Sonnentag *et al.*, 2017).

Previous research has found differences in the effects of qualitative and quantitative job demands in relation to detachment from work (cf. Sonnentag and Fritz, 2015). But findings

relating to prolonged recovery are limited. We used a job demands–resources model as a basis for our analyses but also added two illegitimate task indices (Semmer *et al.*, 2010). These two indices were highly correlated with the qualitative and quantitative job demand measures and so provided no additional explanatory value.

The results showing more recovery problems in employees with a university education is somewhat surprising since this group is typically assumed to have more resources and a better financial situation, involving more opportunities to use free time for relaxation and recovery. Also, this finding is in contrast with the findings of a previous study based on a representative group of the Swedish labor force (Aronsson and Gustafsson, 2005), where poor income was related to delayed recovery. Despite providing information on social position, education and income data may have differential associations with health-related measures (Stronks *et al.*, 1997). However, income data were not available in the current study. This means that future studies are needed to investigate whether the present study findings can be reproduced in other occupational groups and investigate further any consistent links to education and income. Also, we assumed that rumination, in its hindering detachment from work, can act as a psychological mechanism linking work characteristics and recovery (cf. Sonnentag and Fritz, 2015; Sonnentag *et al.*, 2017). Consequently, future research should also include individual uncertainty, the blurring of work and non-work spheres and emotional demands along with organizational conditions, and other characteristics of contemporary working life, which may relate to rumination.

The results suggest a need of extending recovery windows beyond measuring recovery after one night's rest, which is a rather common time frame used in recovery studies (cf. Sonnentag *et al.*, 2017). Indeed, employees with certain work characteristics seem to need longer periods for recovery. In general, existing post vacation studies show that recovery effects of vacation fade out rather quickly but that there are differences relating to the vacation content (de Bloom *et al.*, 2013). The present study of post work recovery also suggests that content plays a role, but in this case in terms of job content and job characteristics.

The present cross-sectional questionnaire study was of an exploratory character with limitations including recall problems, particularly so when employees were asked about how they felt after shorter and longer vacations in the past. Thus, an important issue relates to having measurements closer in time to each of the recovery windows and ideally use a longitudinal design to allow investigation of potential causal mechanisms, which cannot be described with any cross-sectional study. Another limitation involves not considering anticipatory stress. In many occupations, the working day may prompt anticipatory tension, which may limit time for recovery time in the morning, and at the end of a vacation. An additional issue relates to the psychological content of the recovery windows, and in particular the longer ones. In vacation research, spending time freely is assumed to involve autonomy, which may generate psychological gains. However, this may be closely related to content and to passive (e.g. release from job demands) and active mechanisms (e.g. engaging in various activities) (de Bloom *et al.*, 2010). Yet, there are several practical issues to consider when researching people on their time off work. Here, the use of modern information technology (e.g. apps) to collect data offers opportunities for securing valid and reliable data in individuals' daily life settings on and off work (de Bloom *et al.*, 2010). Moreover, this approach would allow dynamic and online monitoring of stress, recovery and activity patterns in larger samples (Alberdi *et al.*, 2016) within different group, organizational and societal settings to allow accounting for any variations between contexts. Such dynamic online monitoring would also provide insights regarding flexible working conditions, work-life balance and recovery in the modern 24/7 society.

Global changes, with economic cycles of booms and recessions, influence nations and their welfare systems differently. For instance, a welfare state and its resource allocation may vary during prosperity and economic crisis depending on how the welfare systems are

funded (cf. Paris, 2014). This may have repercussions both at the individual level but also for welfare organizations. For instance, an economic crisis may involve cut-downs and staff reduction within the welfare sector while also increasing the workload of employees by bringing about more clients, with perhaps some of these clients having more difficult problems. However, in the national welfare setting investigated here, the situation has been found stable also during times of recession and crisis (cf. Paris, 2014).

To conclude, the present study contributes to the existing literature, which has mainly investigated job demands and detachment (cf. Sonnentag *et al.*, 2017) or micro-breaks (e.g. Kim *et al.*, 2018), by investigating prolonged recovery periods, and differentiating between recovery windows. Another important contribution of this study to the existing literature involves the findings regarding education, where individuals with a higher education had poorer recovery. These individuals typically hold jobs that involve qualitative demands, which in turn, may impede detachment and recovery outside work. This means that the present results are relevant for a broader discussion about dissolved boundaries between work and non-work spheres (Allvin *et al.*, 2011) and the ongoing changes toward more cognitively demanding work requiring more of problem solving. In addition, this study provides rather hands-on knowledge of how different work characteristics in groups with different educational levels can delay recovery. The regularity of the patterns suggests that the results reflect a general rather than a personal and individual problem. Thus, the idea of having exactly the same working hours for all without considering job content can be questioned if all are to be provided reasonable opportunities for recovery from work. This means that additional research of how the long arm of the job relates to various aspects of organizational and societal/welfare functioning is needed to allow promoting individual unwinding, and recovery.

References

- Alberdi, A., Aztiria, A. and Basarab, A. (2016), "Towards an automatic early stress recognition system for office environments based on multimodal measurements: a review", *Journal of Biomedical Informatics*, Vol. 59, February, pp. 49-75.
- Allvin, M., Aronsson, G., Hagström, T., Johansson, G. and Lundberg, U. (2011), *Work without Boundaries: Psychological Perspectives on the New Working Life*, John Wiley & Sons, West Sussex.
- Aronsson, G. and Gustafsson, K. (2005), "Vacation – still an issue of workers' protection? An empirical study of vacation and recuperation", *International Journal of Health Services*, Vol. 35 No. 1, pp. 143-169.
- Aronsson, G., Bejerot, E. and Härenstam, A. (2012), "Onödiga och oskäligen arbetsuppgifter bland läkare: Samband mellan illegitima arbetsuppgifter och stress kartlagt i enkätstudie. Unnecessary and unreasonable work tasks among physicians. Associations between illegitimate tasks and stress mapped in survey study (in Swedish)", *Läkartidningen*, Vol. 10948 No. 48, pp. 2216-2219.
- Aronsson, G., Gustafsson, K. and Astvik, W. (2014), "Work conditions, recovery and health: a study among workers within preschool, home care, and social work", *The British Journal of Social Work*, Vol. 44 No. 6, pp. 1654-1672.
- Aronsson, G., Svensson, L. and Gustafsson, K. (2003), "Unwinding, recuperation and health among compulsory-school and high-school school teachers in Sweden", *International Journal of Stress Management*, Vol. 10 No. 3, pp. 217-234.
- de Bloom, J. (2015), "Making holidays work", *Psychologist*, Vol. 28 No. 8, pp. 632-636.
- de Bloom, J., Geurts, S.A. and Kompier, M.A. (2013), "Vacation (after-) effects on employee health and well-being, and the role of vacation activities, experiences and sleep", *Journal of Happiness Studies*, Vol. 14 No. 2, pp. 613-633.

- de Bloom, J., Geurts, S.A., Taris, T.W., Sonnentag, S., de Weerth, C. and Kompier, M.A. (2010), "Effects of vacation from work on health and well-being: lots of fun, quickly gone", *Work & Stress*, Vol. 24 No. 2, pp. 196-216.
- de Bloom, J., Kompier, M., Geurts, S., de Weerth, C., Taris, T. and Sonnentag, S. (2009), "Do we recover from vacation? Meta-analysis of vacation effects on health and well-being", *Journal of Occupational Health*, Vol. 51 No. 1, pp. 13-25.
- Demerouti, E., Bakker, A.B., Nachreiner, F. and Schaufeli, W. (2001), "The job demands-resources model of burnout", *Journal of Applied Psychology*, Vol. 86 No. 3, pp. 499-512.
- Gustafsson, K., Lindfors, P., Aronsson, G. and Lundberg, U. (2008), "Relationships between self-rating of recovery from work and morning salivary cortisol", *Journal of Occupational Health*, Vol. 50 No. 1, pp. 24-30.
- Hackman, J.R. and Oldham, G.R. (1975), "Development of the job diagnostic survey", *Journal of Applied Psychology*, Vol. 60 No. 2, pp. 159-170.
- Kim, S., Park, Y. and Headrick, L. (2018), "Daily micro-breaks and job performance: general work engagement as a cross-levels moderator", *Journal of Applied Psychology*, Vol. 103 No. 7, pp. 772-786, doi: 10.1037/apl0000308.
- Kinsten, A., Magnusson Hanson, L., Hyde, M., Oxenstierna, G., Westerlund, H. and Theorell, T. (2007), "SLOSH – Swedish longitudinal occupational survey of health: a nationally representative psychosocial survey of Swedish working population", Report No. 321, Stress Research Institute, Stockholm.
- Little, R.J.A. and Rubin, D.B. (1987), *Statistical Analysis with Missing Data*, Wiley, New York, NY.
- McEwen, B. (1998), "Protective and damaging effects of stress mediators", *New England Journal of Medicine*, Vol. 338 No. 3, pp. 171-179.
- Mattison, M. (2000), "Ethical decision making: the person in the process", *Social Work*, Vol. 45 No. 3, pp. 201-212.
- Meissner, M. (1971), "The long arm of the job: a study of work and leisure", *Industrial Relations: A Journal of Economy and Society*, Vol. 10 No. 3, pp. 239-260.
- Paris, V. (2014), "The impact of the economic crisis on health systems of OECD countries", *Medicine Sciences*, Vol. 30 No. 10, pp. 910-915, doi: 10.1051/medsci/20143010019.
- Rizzo, J.R., House, R.J. and Lirtzman, S.I. (1970), "Role conflict and ambiguity in complex organizations", *Administrative Science Quarterly*, Vol. 15 No. 2, pp. 150-163.
- Semmer, N.K., Tschan, F., Meier, L.L., Faccin, S. and Jacobshagen, N. (2010), "Illegitimate tasks and counterproductive work behavior", *Applied Psychology*, Vol. 59 No. 1, pp. 70-96.
- Smit, B.W. (2016), "Successfully leaving work at work: the self-regulatory underpinnings of psychological detachment", *Journal of Occupational and Organizational Psychology*, Vol. 89 No. 3, pp. 493-514.
- Sonnentag, S. and Bayer, U.V. (2005), "Switching off mentally: predictors and consequences of psychological detachment from work during off-time", *Journal of Occupational Health Psychology*, Vol. 10 No. 4, pp. 393-414.
- Sonnentag, S. and Fritz, C. (2015), "Recovery from job stress: the stressor detachment model as an integrative framework", *Journal of Organizational Behavior*, Vol. 36 No. 1, pp. 72-103.
- Sonnentag, S. and Zijlstra, F.R. (2006), "Job characteristics and off-job activities as predictors of need for recovery, well-being, and fatigue", *Journal of Applied Psychology*, Vol. 91 No. 2, pp. 330-350.
- Sonnentag, S., Venz, L. and Casper, A. (2017), "Advances in recovery research: what have we learned? What should be done next?", *Journal of Occupational Health Psychology*, Vol. 22 No. 3, pp. 365-380.
- Stronks, K., van de Mheen, H., van den Bos, J. and Mackenbach, J.P. (1997), "The interrelationship between income, health and employment status", *International Journal of Epidemiology*, Vol. 26 No. 3, pp. 592-600.

-
- Sverke, M. and Sjöberg, A. (2000), "The interactive effect of job involvement and organizational commitment on job turnover revisited: a note on the mediating role of turnover intention", *Scandinavian Journal of Psychology*, Vol. 41 No. 3, pp. 247-252.
- Sverke, M., Hellgren, J. and Öhrming, J. (1999), "Organizational restructuring and health care work: a quasi-experimental study", in Le Blanc, P.M., Peeters, M.C.W., Büssing, A. and Schaufeli, W.B. (Eds), *Organizational Psychology and Health Care: European Contributions*, Rainer Hampp Verlag, München, pp. 15-32.
- Tabachnick, B.G. and Fidell, L.S. (2014), *Using Multivariate Statistics*, 6th ed., Pearson Education, Essex.
- Tham, P. and Meagher, G. (2009), "Working in human services: how do experiences and working conditions in child welfare social work compare", *British Journal of Social Work*, Vol. 39 No. 5, pp. 807-827.
- Walsh, J.T., Taber, T.D. and Beehr, T.A. (1980), "An integrated model of perceived job characteristics", *Organizational Behavior and Human Performance*, Vol. 25 No. 2, pp. 252-267.
- Zijlstra, F.R. and Sonnentag, S. (2006), "After work is done: psychological perspectives on recovery from work", *European Journal of Work and Organizational Psychology*, Vol. 15 No. 2, pp. 129-138.

Corresponding author

Gunnar Aronsson can be contacted at: Gunnar.Aronsson@psychology.su.se

For instructions on how to order reprints of this article, please visit our website:

www.emeraldgrouppublishing.com/licensing/reprints.htm

Or contact us for further details: permissions@emeraldinsight.com

Reproduced with permission of copyright owner. Further reproduction prohibited without permission.