Work Conditions, Recovery and Health: A Study among Workers within Pre-School, Home Care and Social Work

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Abstract

The study investigated the working conditions associated with the accumulation of stress and lack of recovery and how recovery is related to health. The study group was employed in pre-school, home care and social work (n = 193). Recovery was assumed to be an explanatory variable for the relations between work and health. The response rate on a survey was 79 per cent. Cluster analysis identified three groups: the ‘Recovered’ (36 per cent of the total group) and ‘Not Recovered’ (25 per cent) and the ‘In-between’ (39 per cent). The Not Recovered displayed the whole chain of risk factors, involving difficult working conditions to which they responded with increased compensatory strategies. Despite this group having significantly greater reports of ill health, work absenteeism was not greater, which is likely related to their substituting sickness absence with sickness presence. As many as 43 per cent of the social workers were found to belong to the Not Recovered group. Multiple regression analyses controlling for background variables revealed that the Not Recovered group had a significantly higher relative risk for poor self-rated health than those in the Recovered group. Even sharper increases in relative risk existed for the other five symptoms that were analysed. Practical implications and new research questions are discussed.

Keywords: Health, human service work, sickness presenteeism, recovery, stress, work organisation

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Introduction

Many employees in human service work perceive their working situation to be characterised by high workload and not having adequate resources to satisfactorily carry out the work (Audit Commission, 2002; Hellgren et al., 2003; Härenstam et al., 2004; Härenstam and MOA, 2005). Statistics also indicate that there has been a steady high prevalence of work-related stress among occupations in the public welfare sector (European Agency, 2009). In Sweden, as in many other countries, human service work is highly feminised.

The major occupational groups in this sector are social workers, preschool and school staff, and elder care employees. Social workers have stood out as being particularly at risk. In a comparison with other human service professions, social workers and especially child welfare social workers reported higher workloads and more difficult demands (Tham and Meagher, 2009). These results showed that, although the social workers made positive assessments of some dimensions of their working lives, in comparison to the other groups, they reported experiencing high quantitative and qualitative workloads, a low degree of innovation in their work climates, as well as conflicts between work and private life.

Although there are differences in the work content of the various human service occupations, they also share a number of traits that are of interest. Human service work is in Sweden and many other countries typically publicly commissioned to provide assistance and support as well as protection for, for example, children and families in more serious need. Their mission to assist other people involves facing dilemmas and trade-offs of many kinds. Not being able to give the care and support that are perceived as necessary can generate feelings of inadequacy and lead to compensatory strategies (Astvik, 2003). Feelings of powerlessness can arise when trying to help those whose needs cannot be even remotely met by the available resources. For those in human service work, feelings of inadequacy and powerlessness may be lying latent, and the frequency and intensity of their emergence largely depend on the employee’s competence, resources and other organisational conditions. Being able to handle such emotional demands without becoming mentally or emotionally overwhelmed, and without resorting to defensive strategies that might seriously damage service quality, is an important professional skill. Strategies for balancing these feelings may be different for different people, with the framework for the potential strategies depending on the organisation of the workplace and its support system (Astvik, 2003). Mentally, it is difficult to isolate such feelings in time and space—they cross the spatial and temporal boundaries of the workplace and can threaten necessary recovery processes.
Stress, recovery and health

Recent findings in work-related stress research point to the relevance of recovery in understanding stress-related illness. A rapid mobilisation of energy when needed followed by a rapid return to psychological and physiological base level when the strain is over is an economical use of the individual’s mental and physical resources. If an individual’s efforts do not result in a return to his or her base levels before further strain accumulates, the total wear and tear on the biological system is affected (McEwen, 1998; Lundberg, 2005; Sonnentag and Bayer, 2005). Unwinding and recovery are elements in the allostatic load model that focuses the organism’s efforts and ability to maintain internal stability and adaptation by rapid change (McEwen, 1998). The repeated and prolonged stress-related activation of various physiological systems without the opportunity to rest and recover contributes to the deterioration of the physiological resources and thus increases the risk of ill health in the long term. Sleep is probably the most important recovery factor after an effort. In a study by Cohen et al. (2009), a clear link was found between lack of sleep and susceptibility to cold viruses.

Allostatic load and tensions can occur through anticipation, such as when fear or anxiety arises in connection with one’s cognitive preparation for work or for a demanding or threatening situation. Tensions are also related to the characteristics of the work situation, for example, the degree to which the job entails various unresolved problems that people continue to think about and spend mental energy on outside of work. Another potential source of tension, the ability to finish tasks within the assigned working hours, may not only depend on individual aspects, but may also be related to how the work is organised, as work today is characterised by more tasks which put mental demands on employees that are not regulated by clock time (Allvin et al., 2011).

One type of strategy for dealing with high workload is to compensate by increasing one’s personal efforts (Hockey, 1997; Astvik, 2003; Gustafsson, 2008; Astvik and Melin, 2012). For instance, one could begin with cutting down on short breaks, meetings, etc. and try to work faster. If this is not enough, another option is to extend the work outside regular working hours by working overtime, either paid or unpaid. This can involve working outside the workplace on evenings, weekends or during holidays or vacations (Aronsson and Gustafsson, 2005). A further level of compensatory strategies is to work when ill instead of taking sick leave. Sickness presence has been found to be high among care-givers and school personnel (Aronsson et al., 2000) as well as a risk factor for future absenteeism and ill health (Bergstrom et al., 2009a, 2009b).

Social support is another buffering factor against stress reactions. Cohen and his collaborators (1997) found that individuals who worked under high
stress and with few social contacts over a one-year period had a significantly higher risk of becoming ill after exposure to common cold viruses. Social support may have several functions. It meets basic human needs for companionship and group membership. It can also serve as a resource for modifying the impact of workload (Johnson and Hall, 1988). In both cases, social support may be assumed to buffer the impact of workload, which may influence the need for unwinding and recovery.

Unwinding and recovery can be measured by self-rating as well as through physiological measurements (McEwen, 1998). In the current study, we used self-rating items validated against salivary cortisol (Gustafsson et al., 2008), which is a physiological marker related to control, unwinding and recovery. In a study of twenty-five highly skilled women and men working for a governmental agency (Gustafsson et al., 2008), the strongest of fifteen items of rest and recovery predictors for salivary cortisol excretion were when the participants had experienced/been: ‘full of energy during the working day’, ‘fatigue during the working day’, ‘sufficient sleep upon waking up’, ‘rested in the morning’, ‘rested after a weekend’ and ‘worry over something’. The responses to the items ‘rested in the morning’, ‘rested after a weekend’ and ‘rested after a long weekend’ predicted cortisol levels but there was no connection between cortisol levels and ratings of being ‘rested after vacation’. This may have been due to the fact that the study was based on a healthy work group (Lundberg and Lindfors, 2002).

In a study of unwinding and recovery among teachers (Aronsson et al., 2003), six items from this set of fifteen items validated against cortisol were used (Gustafsson et al., 2008). They covered a diurnal cycle of tension and energy during the day and fatigue and sleep during the night. The items represented an approximation of the psychic states of the individuals during twenty-four hours. Cluster analysis created a three-cluster solution where clusters were clearly separated on all the items. The non-recovered group reported significantly more health problems, sickness presenteeism and difficult working conditions than any other cluster groups.

Survey questions with the same or slightly modified wording have also been used in a study of female health workers and analysed in a similar way by cluster analysis (von Thiele et al., 2006). The results showed that there was a relationship between the three created cluster profiles and a composite measure of allostatic load consisting of eleven biomarkers.

**Purpose and research questions**

This study is part of a larger project on coping strategies in human service work. The present paper focuses on unwinding and recovery, which are regarded as intermediate states linking working conditions and working experiences to stress, health and sick leave. To study the chain effect of
effort–unwinding–recovery, eight questions from the aforementioned study by Gustafsson et al. (2008) were used. The practical goal of the study is to put forth research findings that can contribute to the improvement of working conditions. This is to be achieved by identifying the working conditions that are associated with the accumulation of stress and lack of recovery and exploring how recovery is related to health.

For these reasons, we use a holistic approach in the sense that the information gathered on an individual is seen as a whole and not broken down into individual parts or variables (Bergman et al., 2003). In cluster analysis, individuals are grouped according to how they respond to a number of items, with the purpose of forming a meaningful pattern. In the present study, it is the individual’s response patterns for the eight ‘diurnal rhythms items’ that are the basis for the grouping. The assumption was that there are three groups: the two groups at the extremes, the ‘Not Recovered’ and ‘Recovered’ groups; and the ‘In-between’ group in the middle. This classification is supported in several previous studies (Aronsson et al., 2003; von Thiele et al., 2006; Gustafsson et al., 2008; von Thiele-Schwarz, 2011).

The study’s main research questions can be specified as:

- Which working conditions are associated with the accumulation of stress in terms of lack of recovery?
- Does the cluster analysis of the items on unwinding and recovery produce theoretically meaningful and interpretable recovery profiles?
- How are the recovery profiles related to the occupational groups, to the organisational and working conditions, and to the individual compensatory strategies at work?
- How do recovery profiles relate to individual health and health-related behaviours?

**Method**

The participants in the study were employed within the areas of elderly care, pre-school (childcare) and social work. Nine workplaces, three from each of these areas, were chosen for study from within two relatively large municipalities in central Sweden. For comparison purposes, the basis for selection was to choose municipalities and workplaces that, according to their own registry statistics, had either low or high rates of sickness absence. Because of time delays in reporting, the selections were based on statistics that were two to three years old. In retrospect, we have been able to examine sickness absence statistics for 2007 and 2008 when the data collection was made. It shows that the sickness absence levels generally declined for the six ‘healthy’ as well as the three ‘sick’ workplaces. A closer inspection of the registry statistics also showed that a few single individuals...
on long-term sick leave heavily influenced sickness absence levels during these years. This makes it difficult to categorise our selected workplaces in terms of ‘healthy’ and ‘sick’ workplaces. When the various workplaces were compared based on our collected survey data with regard to sick leave, the original pattern that was the basis for selection did not appear. The reason may simply be that those on extended sick leaves did not take part in the survey, but also that the scale used for measuring sickness absence was not able to adequately capture those on long-term sick leaves.

The study is based on a questionnaire that was distributed to all of the employees ($N = 247$) at the nine workplaces. The survey was voluntary and was conducted in the spring of 2008 and ended in early autumn. After three rounds of reminders, a total of 195 persons had returned the questionnaire, giving a response rate of 79 per cent.

The survey encompassed 115 questions, which dealt with the psycho-social work environment, health issues, co-operation, strategies, unwinding and recovery, and organisational conditions. Partial missing data were low, generally below 10 per cent.

The majority of the participants were women (91 per cent) and the average age was 46.7 years ($SD = 11.0$). A total of 36 per cent of the participants worked in home care, 38 per cent worked in social work and 26 per cent worked in childcare.

**Measuring instruments and variables**

Most of the items measuring psycho-social conditions and psychosomatic symptoms are developed in Sweden and have been used in many studies the last decades (Lindström et al., 2000; SCB, 2005). Some of the items belong to validated scales. We have mostly used single items because we had to restrict the length of the questionnaire. For self-rated health, a well-validated single item was used (DeSalvo et al., 2006).

**Background conditions**

The background variables were sex, marital status, age, country of birth, children, years at the current workplace, years in current profession, type of employment contract and working hours (full-time/part-time). Age is divided into four categories: eighteen to thirty-five years (1), thirty-six to forty-five years (2), forty-six to fifty-five years (3) and fifty-six to sixty-five years (4).

**Working conditions, work organisation and compensatory strategies**

The following items covered different aspects of the working conditions and individual compensatory strategies.
Quality of work: Do you have adequate resources to perform your work in a way that is satisfactory to you? Do you ever feel inadequate over not being able to give the help or support that you would like to? Do you have so much to do that you don’t get around to doing as good of a good job as you would like? Are you satisfied with the quality of the work you do?

Work demands: Do you have enough time to finish your work tasks? Do you have to work at an extremely high tempo? Is your work such that you need to reorganise and change priorities? Does your work involve dealing with complicated problems or situations? Are there clearly defined goals for your work? Are there clear instructions on how to perform your work?

Influence: Are you and your workgroup able to influence how much resources you will have to carry out your work? Are you and your workgroup able to influence the amount of work you are to carry out?

Support: If needed, do you receive support and help with your work from your colleagues/your closest supervisor? Does your work allow time for reflection and discussions of working methods and experiences at work?

Strategies: When there is a lot to do, I work more intensively in order to finish what needs to be done. I skip breaks or lunch to finish what needs doing. I lower the quality of my work in order to finish what needs to be done. I bring work home with me and do it in my spare time. I think of my work even when I am off work.

The five-point scale of the above items and statements were dichotomised (1 = very often/always/rather often, 2 = sometimes/rather seldom/very seldom, never).

Unwinding and recovery

The cluster analysis was based on the following eight items, reflecting a daily cycle and recovery during longer vacations:

- Do you feel very tired during the working day?
- Do you feel energetic during a working day?
- Do you experience physical fatigue after a working day?
- Do you experience mental fatigue after a working day?
- During the past three months, have you had difficulties sleeping because work-related thoughts have kept you awake?
- Do you feel thoroughly rested when you start working in the morning?
- Do you feel rested and recovered when you return to work after a weekend?
- Do you feel rested and recovered when you return to work after several weeks leave from work or vacation?
Response scale: 5 = very often/always, 4 = fairly often, 3 = sometimes, 2 = somewhat rarely, 1 = very rarely/never.

The internal consistency (Cronbach’s alpha) for the eight items was 0.87.

**Health-related issues**

How would you rate your own health? The five-point response scale was dichotomised (0 = very good/good, 1 = fair/poor/very poor).

Five psychosomatic symptoms: How often during the past three months have you suffered from ... digestive disorders/stomach complaints, headaches, pains in the neck/shoulder/back/arms/legs, sadness and insomnia? The five-point scale was dichotomised (1 = virtually daily/several times per week/a few times per month, 0 = approximately once per month/not at all).

How many days over the past twelve months have you been away from work due to your own sickness? The possible responses were: none (1); less than a week (2); one to two weeks (3); two to four weeks (4); and more than one month (5). The response scale was dichotomised (0 = none/less than a week, 1 = one week or more).

How many times over the previous twelve months have you been absent from work due to your own sickness? The five-point scale was dichotomised (0 = no times/one to three times, 1 = four to six times/seven to ten times/more than ten times).

Over the previous twelve months, have you taken vacation/compensatory leave/flextime leave or the like rather than reporting yourself sick when you have been ill? The five-point scale was dichotomised (0 = none/have not been sick the past twelve months, 1 = one to two times/three to five times/more than five times).

Has it happened over the previous twelve months that you have gone to work despite feeling that you really should have taken sick leave because of your state of health? The possible responses were: no, never (1); yes, once (2); yes, two to three times (3); more than five times (4); and have not been sick during the past twelve months (5). In the regression analyses, this scale was also dichotomised (0 = have not been sick during the past twelve months/no never/yes, once, 1 = yes, two to three times/four to five times or more than five times).

To what extent have you over the last three months ...

– exercised at least thirty minutes (i.e. jogged, played sports, etc. so that you get sweaty)?

– engaged in lighter physical activity (such as walking) for a total of at least thirty minutes during a day?

The four-point response scale was dichotomised (0 = never/one day, a few days per month, 1 = no, a few days per week/virtually every day).
Statistical methods

Since the entire populations of workers at the workplaces were invited to participate in the study—and not a probability samples—the statistical analyses should be seen as a guide for assessing the extent of the different group differences. We have therefore chosen to specify $p$-values and not to test against significance levels.

Cluster analysis was carried out with the K-means cluster (SPSS, version 18.0, Inc., Chicago, IL), which is an appropriate method for large-sample cluster and appropriate when the number of clusters is determined in advance. As previously mentioned, the assumption was that there were three distinct groups (clusters) with respect to the diurnal cycle, which is reflected by the eight selected items. K-means cluster is based on the principle that an individual is assigned to the cluster in which the distance between the individual and the cluster’s centre is the least.

Simple associations between dichotomised variables were tested by $\chi^2$ analyses (Pearson). For calculation of the relative risk (RR), modified Poisson regressions (Zou, 2004), with a 95 per cent confidence interval (CI), were used in SPSS. The purpose of the specific regression analyses was to give a picture of how different patterns of unwinding predict health, while controlling for certain background characteristics.

Ethical approval

According to the statues of the Central Ethical Review Board in Sweden between 1 January 2004 and 31 May 2008 (when the application of this study was submitted), ethical approval was not necessary if the subject of the research was given information about the research and consented to the research that concerned him or her.

Results

In this section, a comparison of the three professions according to a number of background variables is first presented, followed by the results of the cluster analysis and, lastly, the results of the regression analyses.

As shown in Table 1, the proportion of men is very small, which means that any analyses based on sex would not be worthwhile. Also, comparisons related to ethnicity meet the same limitations. The pre-school has a slightly lower proportion of people in the age group eighteen to thirty-five years, while social service has a slightly lower proportion in the oldest group. Home care has significantly fewer who work full-time than pre-school and social work. The percentage of employees with fixed contracts is much higher than what is usually the case among these three categories of municipal employees. There are no temporary employees in the pre-school group.
Comparison of recovery profiles according to cluster analysis

The clusters or recovery profiles (see Figure 1) were labelled ‘Not Recovered’, ‘In-between’ and ‘Recovered’. Of the total sample group, the Not Recovered comprise 25 per cent, the Recovered groups comprise 36 per cent, while the In-between group is the largest, with 39 per cent. For each of the eight items comprising the clusters, there are substantial differences—often of a scale unit or more—between the two extreme groups (Figure 1).

Those in the Not Recovered group appear to be in a vicious cycle. Despite experiencing severe tiredness after the working day, they also report prevalent sleep problems—and the percentage of those who do not feel rested in the morning is far greater than for the other groups. Also, within the In-between group, there is a relatively large segment who reported experiencing mental and physical fatigue during and after the working day, but who also showed better values for the sleep and rest variables. For these variables, the values of the In-between group approach those of the Recovered group.

For the item that indicates the most lasting and long-term effects, namely rested after vacation, the values for the In-between and Recovered groups
nearly coincide while the distance to the Not Recovered group is in the range of one scale unit. In this group, stress and load seem to accumulate to such an extent that not even a vacation is enough for recovery.

**Background and cluster (recovery) profile**

The average age varies slightly between the cluster groups, with 42.7 years for the Not Recovered group, 45.2 years for the In-between group and 48.2 years for the Recovered group. The Recovered group had spent the longest time at their current workplaces and in their current professions (nine and eighteen years, respectively), followed by the In-between group (eight and fifteen years) and the Not Recovered group (six and eleven years). It is somewhat more common with children living at home among the Not Recovered group, but the differences between the three cluster groups for this variable are not significant according to $\chi^2$-testing.

Women are overrepresented in the Not Recovered group and underrepresented in the Recovered group ($\chi^2$, (2) = 1.358, $p = 0.507$). Part-time employees are overrepresented in the In-between group (39 per cent) as compared to 31 per cent in the Recovered and 21 per cent in the Not Recovered ($\chi^2$, (2) = 4.531, $p = 0.104$).

**Connection between occupational category and cluster membership**

There are large differences in the distribution of the three occupational categories in the three cluster profiles (Figure 2). Among pre-school personnel, 57 per cent fell into the category of Recovered, while the
corresponding figures for those in home care and social work are 35 per cent and 24 per cent, respectively. Among social workers, 43 per cent fell into the Not Recovered group as compared to 15 per cent among home care personnel and 14 per cent among pre-school personnel ($\chi^2$, (4) = 28.433, $p < 0.001$).

Relationships between recovery profile and work organisation, work experiences and compensatory strategies

As can be seen in Table 2, there are very large differences between the three recovery profiles for service quality, work demands, influence and social support, with a few exceptions: to what extent goals were clearly defined and in support from colleagues. Regarding service quality items, for example, as many as 87 per cent of the Recovered group perceived that they quite often or very often have sufficient resources to carry out their work in a satisfactory manner, while the figure is 32 per cent for the Not Recovered group.

Table 3 shows that compensatory strategies are far more common within the Not Recovered group than the other two groups. Regarding the regular working day, the differences are not so great, as all three groups indicated that they increase their work intensity when there is a lot to do. The differences emerge over to what extent they work and/or think about their work outside of the formal (spatial and temporal) boundaries of work. Among the Recovered group, only 12 per cent reported that they think of their work when they are off work, compared with 62 per cent among the Not Recovered group. Besides increasing work intensity, another strategy against overload was to lower the standards of quality. A relatively low proportion uses this strategy and the difference between the groups is not significant.

![Figure 2 Percentage of the three recovery clusters for the different occupational categories](image-url)
Connection between recovery profiles and the aspects of sickness absence and health

In Table 4, the recovery profiles are compared with respect to health and health-related behaviours. As can be seen, the differences between the recovery profiles are very large, with low percentages for the Recovered group and very high percentages for Not Recovered. The results for the variables of insomnia and sadness may be seen as a validation of the cluster analysis results, since these aspects overlap with the items underlying the recovery profiles.

There are no group differences in regard to sick days taken and there is a tendency towards group differences in regard to periods of sick leave taken.
It might be expected that the Not Recovered group with the worst health would have the most periods of sick leave but it is in fact the In-between group. However, an examination of sickness presence, which can be considered a compensatory strategy, shows very large differences between the groups and in the expected direction. In the Recovered group, only 16 per cent reported sickness presenteeism twice or more during the prior twelve months, compared to 59 per cent in the In-between group and 73 per cent in the Not Recovered group. In the Not Recovered group, 44 per cent chose to go on vacation instead of sick leave compared with 20 per cent in the Recovered group.

Physical exercise was lower for the In-between group.

Regression analyses of the relationships between recovery profiles and health

To get a more stringent test of the relationships between health and the recovery profiles, regression analyses were carried out while controlling for three background variables for which the recovery profiles differed (age, working time and occupational category). The RR were calculated and are presented in Table 5. The analysis shows that the Not Recovered group has a higher relative risk (RR = 3.42) for impaired self-rated health than the Recovered group (reference group). Also, the In-between group showed a tendency for poorer health (RR = 2.46). In general, the In-between group was found to have higher RR than the Recovered group, with a CI which was greater than 1, while the Not Recovered group revealed an even higher RR. As mentioned earlier, the results of the analyses of the variables of insomnia and sadness can be seen as a

<table>
<thead>
<tr>
<th>Strategies and approaches</th>
<th>Recovered (n = 70)</th>
<th>In-between (n = 74)</th>
<th>Not Recovered (n = 48)</th>
<th>p</th>
<th>Total (n = 192)</th>
</tr>
</thead>
<tbody>
<tr>
<td>When there is a lot to do, I work more intensively</td>
<td>70</td>
<td>80</td>
<td>90</td>
<td>0.018</td>
<td>79</td>
</tr>
<tr>
<td>I skip short breaks/lunch to finish work</td>
<td>7</td>
<td>23</td>
<td>52</td>
<td>&lt;0.001</td>
<td>25</td>
</tr>
<tr>
<td>I take work home with me to do in my spare time</td>
<td>6</td>
<td>3</td>
<td>21</td>
<td>0.001</td>
<td>9</td>
</tr>
<tr>
<td>I think of my work even when I am off work</td>
<td>12</td>
<td>22</td>
<td>62</td>
<td>&lt;0.001</td>
<td>28</td>
</tr>
<tr>
<td>I lower the quality of my work to get it finished</td>
<td>12</td>
<td>18</td>
<td>28</td>
<td>0.087</td>
<td>18</td>
</tr>
</tbody>
</table>

1 Quite often/very often.
validation of the cluster analysis results. The RR for these symptoms in these groups is high, with broad confidence intervals, which reflects the low incidence of such problems in the reference group.

Discussion

The study’s objective was to provide a detailed examination of the relations between work conditions, accumulation of stress, lack of recovery and health among employees in human service work. Lack of recovery was assumed to be an important intermediate link between working conditions and health/ill health and sick leave.

The cluster analysis, based on eight validated survey questions, revealed three theoretically meaningful and interpretable recovery profiles. For all eight variables, there were substantial differences between the two extreme groups during the approximated twenty-four-hour cycle as well as in the assessment of recovery after weekends and a vacation. Cluster analysis integrates information about individuals into meaningful patterns, and we believe that our cluster analysis has properly fulfilled this purpose. Despite
the relatively small sample and the further division into subgroups, the study had the power to detect statistical significant differences.

The results also showed clear correlations in the expected direction between the recovery profiles and individual health and health-related behaviours. The Not Recovered group may be classified as a high-risk group for ill health, working under difficult working conditions to which they respond with increased effort and compensatory strategies. Despite significantly higher ill health reports, they did not have a greater extent of sick leave, which may be explained by their substituting sick leave with sickness presenteeism (Aronsson et al., 2011) and using holidays or compensation days instead of sick leave.

The various recovery groups are relatively similar with regard to the ranking of compensatory strategies. Working more intensively was the most common strategy for all of the groups, followed by skipping breaks and, then, bringing work home. Conclusions on this order should be made cautiously, since the possibilities of bringing work home are likely to vary between the recovery profiles. Although relatively few respondents actually conduct work at home, apart from among the Not Recovered group, the percentage of those who think about their work in their free time is still relatively large. Among the Not Recovered group, the figure is over 60 per cent, compared to 12 per cent among the Recovered group.

As many as 87 per cent of those in the Not Recovered group reported not having enough time for reflection and discussion, which most likely constitutes an unsatisfactory situation for them. The two items concerning social support from colleagues and from the supervisor clearly point in the same direction. Such situations are likely to lead to mental spillover, as thoughts concerning uncompleted work or other work issues arise outside of work. An avenue for continued research on compensatory strategies would be

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Table 5 Relative risk (RR) with self-rated health and health symptoms as dependent variables

<table>
<thead>
<tr>
<th>Health</th>
<th>Recovered</th>
<th>In-between</th>
<th>Not Recovered</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RR</td>
<td>CI</td>
<td>RR</td>
</tr>
<tr>
<td>Low self-rated health²</td>
<td>1</td>
<td>2.46</td>
<td>1.01–5.95</td>
</tr>
<tr>
<td>Stomach aches/digestive problems³</td>
<td>1</td>
<td>2.62</td>
<td>1.18–5.81</td>
</tr>
<tr>
<td>Headache³</td>
<td>1</td>
<td>2.70</td>
<td>1.42–5.13</td>
</tr>
<tr>
<td>Pains in the neck/shoulders back³</td>
<td>1</td>
<td>1.78</td>
<td>1.25–2.55</td>
</tr>
<tr>
<td>Insomnia³</td>
<td>1</td>
<td>3.90</td>
<td>1.53–9.92</td>
</tr>
<tr>
<td>Sadness³</td>
<td>1</td>
<td>8.64</td>
<td>2.03–36.74</td>
</tr>
</tbody>
</table>

Relative risk (RR) and 95% confidence interval (CI) are presented with the Recovered group as the reference category (n = 191).

¹ Adjusted for age, working time and occupational group.
² Response scale: self-rated health: 1 = fair/poor/very poor, 0 = very good/good.
³ Response scale: 1 = virtually every day, several times a week, a couple times a month, 0 = approximately once a month, not at all.
to investigate the internal order of the different strategies and to analyse the determinants and consequences of the various patterns.

A notable result is that as many as 43 per cent of the social workers belong to the Not Recovered cluster profile, while only 24 per cent of the social workers fell into the Recovered profile.

Could the different recovery profiles be due to different workload outside the workplace? One measure of workload may be number of children living at home. Children were slightly more common in the Not Recovered group, although the differences between the cluster profiles were not significant.

Is there a risk that some results are a result of mass significance? However, the trends found are so clear-cut that single instances of such significant results cannot alter the overall picture.

It may generally be concluded that the study provides a relevant and clear picture of the nature of unwinding and recovery in the study groups. The relationship between lack of unwinding and recovery and various health indicators were in the expected direction based on theory and previous research, which certify the validity of the study.

The investigated workplaces were, as previously mentioned, not selected on the basis of being representative. Seeing as healthy workplaces were in the majority in the sample, there is no reason to believe that the study material represented particularly problematic workplaces—quite the contrary.

From a practical point of view, the study identified a number of specific circumstances associated with the accumulation of stress and lack of recovery, which are possible to change. A key factor for improvement seems to be the demarcation between work and life outside work; it is not just a question of the individual's ability to set limits. The possibilities of setting limits and avoiding feelings of inadequacy are also linked to the organisation of work as well as its management and leadership. Clear objectives, resources that match the qualitative requirements and time for reflection reduce the need to take work out of the workplace and into other spheres of life.

An interesting result for future research concerns the response pattern for the item about whether the employees felt rested after a longer vacation. Further studies could help present a more thorough picture of the conditions that characterise the work situation for those who suffer from fatigue which is so severe that recovery is not felt even after a vacation.

Finally, the associations that emerged are compelling enough reasons to proceed with longitudinal studies in order to establish the causal links and also expand the scope of the professions included.

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References


