Changes in mental health as a predictor of changes in working time arrangements and occupational mobility: Results from a prospective cohort study

Lore De Raeve a,⁎, IJmert Kant a, Nicole W.H. Jansen a, Rineke M. Vasse b, Piet A. van den Brandt a

Department of Epidemiology, School for Public Health and Primary Care, Maastricht University, Maastricht, The Netherlands
Department of Social Medicine, Maastricht University, Maastricht, The Netherlands

Received 23 January 2008; received in revised form 23 April 2008; accepted 6 May 2008

Abstract

Objective: The aim of this prospective study was to gain insight into a possible causal relationship between mental health and characteristics of the work situation. Methods: Using longitudinal data from the Maastricht Cohort Study, this study examines whether deterioration in mental health (prolonged fatigue, need for recovery, and psychological distress) results in a subsequent change in working time arrangements (assessed by means of logistic regression analysis) or occupational mobility (assessed by means of Cox regression analysis). Results: Compared to employees not experiencing a deterioration in mental health, employees who became a prolonged fatigue case were more likely to reduce their working hours (OR 2.49; 95% CI 1.42–4.35) and leave a shift work job (OR 3.44; 95% CI 1.42–8.38). Employees who became a need for recovery case were more likely to reduce their working hours (OR 2.83; 95% CI 1.53–5.26) or change jobs within the company (RR 1.31; 95% CI 1.07–1.61). Employees who became a psychological distress case were more likely to change jobs within the company (RR 1.38; 95% CI 1.16–1.65) or to change jobs from one employer to another (RR 1.45; 95% CI 1.03–2.03). Conclusion: The results of this study provide evidence for a possible causal relationship between deterioration in mental health and subsequent change in working time arrangements or occupational mobility. These results suggest that workers adapt to the onset of a mental health problem by reducing their working hours, by leaving a shift work job, by changing jobs within the company, or by changing jobs from one employer to another.

Keywords: Change; Longitudinal; Mental health; Occupational mobility; Working hours; Work schedule

Introduction

Mental health problems are a major problem in the working population and are a leading cause of sickness absence and work disability. Several characteristics of the work situation, such as working time arrangements [1–3], psychosocial work characteristics [4–6], interpersonal con-

⁎ Corresponding author. Department of Epidemiology, Maastricht University, PO. Box 616, 6200 MD Maastricht, The Netherlands. Tel.: +31 0 433882377; fax: +31 0 433884128.
E-mail address: lore.deraeve@epid.unimaas.nl (L. De Raeve).

© 2008 Published by Elsevier Inc.
the work situation, has hardly been examined so far [11,12]. Insight into this relationship may, however, provide valuable information for preventive strategies in the workplace as well as for human resource policies.

The onset of poor mental health may have different effects on employment decisions and turnover of workers. After a health problem emerges, employees may leave the labor force through, for example, unemployment, early retirement, or work disability. However, they may also remain in the labor force and find ways to change the work situation itself in an attempt to adapt to their changed health status. Existing research has mainly focused on individuals leaving the labor force because of ill health [13–15]. Far less research has been conducted on changes in the work situation itself as a result of deteriorated health. Employees may, for example, reduce the amount of working hours or change jobs or employers. A study of Van Amelsvoort et al. [16] found that poor mental health was associated with an increased risk of leaving a shift work job. A previous study of Swaen et al. [9], on the contrary, found no significant differences in baseline mental health between employees who did and those who did not change jobs from one employer to another in a 1-year follow-up period.

To be able to examine the impact of mental health on characteristics of the work situation, a large sample of employees is needed in which both characteristics of the work situation and mental health are measured repeatedly over time. Moreover, a prerequisite for examining causality is that the change in exposure is measured before the actual change in the outcome [17]. Consequently, a change in mental health needs to be measured before the change in the work situation. Furthermore, it needs to be taken into account that effects may be different depending on both the mental health measures and the characteristics of the work situation studied. Therefore, different measures of both work characteristics and mental health were considered in this study. Mental health was assessed using measures of prolonged fatigue, need for recovery, and psychological distress. For example, it might be that people suffering from psychological distress are more likely to adjust their work situation than when they suffer from an elevated need for recovery. Moreover, different outcomes were studied that might react differently in the course of time, i.e., working time arrangements (working hours and work schedule) and occupational mobility (changing jobs and changing employers). For example, when trying to adapt to their deteriorated health, people may weigh up several options against each other. They might then tend to change their working time arrangements rather quickly in response to a deterioration in mental health, whereas it might take longer to actually decide to change jobs because of a change in mental health, possibly because the latter is a more radical change. Therefore, when studying the effects of changes in mental health on changes in the work situation, one also has to consider the time lag that is needed to detect the effects. When chosen time lags are too small, the effect may not have occurred yet. Long time lags on the other hand run the risk of resulting in an underestimation of the actual effect, because it is possible that initial effects have already taken place in an earlier stage and only residual effects are measured. Finally, the net effect of a change in health can only be determined by controlling for possible confounding factors that have shown to be associated with both exposure and outcome, such as demographics and other work characteristics.

Taking into account the above methodological and conceptual considerations, the aim of this prospective study was to gain insight into a possible causal relationship between mental health on the one hand and working time arrangements and occupational mobility on the other. Therefore, this study examines whether deterioration in mental health (prolonged fatigue, need for recovery, and psychological distress) between baseline and 1-year follow-up subsequently results in a reduction of working hours per week, a change in work schedule from shift work to day work, a change in job function within the company, or a job change from one employer to another after the first year of follow-up, while controlling for potential confounding factors.

**Methods**

**Design**

This study is based on data from the Maastricht Cohort Study, a prospective study on fatigue at work [18], in which employees from 45 different companies (both blue-collar and white-collar jobs) were followed by means of self-administered questionnaires, which they received at 4-month intervals. Once a year, in May, employees received an extensive questionnaire with items on work and non-work-related factors, demographics, and health factors. Twice a year (in September and in January), employees received a short questionnaire, capturing mainly outcome measures. In May 1998, the baseline questionnaire was sent out to 26,978 employees. Altogether, 12,161 employees completed and returned the baseline questionnaire (response rate of 45%). Twenty-one questionnaires were excluded from analysis because of technical reasons. The baseline (T0) cohort thus consisted of 12,140 people. Details on nonresponse, the procedure, and sectors and trades represented in the Maastricht Cohort Study have been reported elsewhere [18–21]. Employees who had completed the baseline questionnaire and at least one of the following two short questionnaires (T1 and/or T2) received the 1-year follow-up questionnaire (T3) in May 1999 (response rate 79.5%, $n=9655$). The employees who returned the questionnaire at T3 and at least one of the consecutive short questionnaires (T4 and T5) also received the extensive questionnaire (T6) in May 2000 (response rate 66.5%, $n=8070$). Employees returning the T6 questionnaire also received the short questionnaire T7 in September (response rate 63.1%,...
n = 7662) and the final T8 questionnaire in January 2001 (response rate 61.6%, n = 7482).

Changes in mental health were assessed between baseline (T0) and 1-year follow-up (T3). In order to adapt to a deterioration in mental health, employees might change their working time arrangements. In this study, we particularly looked at changes in working hours and work schedule, which were assessed between 1-year follow-up (T3) and 2-year follow-up (T6). Employees might also change jobs in order to adapt to a deterioration in mental health. As it might take a longer period of time to actually decide to change jobs because of ill health, the occurrence of occupational mobility was assessed between 1-year follow-up (T3) and the measurement at 2 years and 8 months of follow-up (T8).

Study population

The study population used in this study was determined as follows. Because we wanted to examine the effect of deterioration in mental health between baseline and 1-year follow-up, employees for whom at least baseline and 1-year follow-up data were available (n = 9655) were considered for this study. Moreover, employees with multiple jobs at T0, T3, or T6 (n = 600) were excluded, because information about the content and the characteristics of the other job was lacking. Pregnant women at T0, T3, and T6 (n = 215) were also excluded from the analyses as they might change their work situation because of pregnancy-related health problems. Finally, for every mental health measured separately, cases at baseline were excluded and only noncases were included. Consequently, three study populations, who were not mutually exclusive, were considered for this study, consisting of 6827 employees for the analyses with respect to the effect of prolonged fatigue, 5897 for need for recovery, and 6828 for psychological distress. Baseline characteristics of these study populations are presented in Table 1.

<table>
<thead>
<tr>
<th>Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deterioration in mental health</td>
</tr>
<tr>
<td>Deterioration in mental health was defined as a change from noncaseness at T0 to caseness at T3 on three mental health measures: need for recovery, prolonged fatigue, and psychological distress. The need for recovery from work was assessed using an 11-item scale from the Dutch Questionnaire on the Experience and Evaluation of Work (Dutch abbreviation VBV) [22–24]. The items represent short-term effects of a day of work. The total score ranged from 0 to 100 (Cronbach’s alpha .78). In line with Broersen et al. [25], a cut-off point of 6 on the 11-item scale was used for case classification. This cut-off point corresponds with a score of 54 on the total need for recovery scale, which also corresponds with a cut-off point based on the upper tertile of the need for recovery scale in the Maastricht Cohort Study. Prolonged fatigue was measured with the 20-item self-reported Checklist Individual Strength (CIS), which has been described extensively elsewhere [26,27]. A composite CIS total score, ranging from 20 to 140 (Cronbach’s alpha .93), was constructed by adding the item scores. A cut-off point of CIS total of &gt; 76 was used for case classification. This cut-off point corresponds with a score of 54 on the total need for recovery scale, which also corresponds with a cut-off point based on the upper tertile of the need for recovery scale in the Maastricht Cohort Study. Psychological distress was measured using the 12-item version of the General Health Questionnaire (GHQ) [28,29]. Employees scoring 4 or more on the 12 GHQ items were considered to be probable cases of psychological distress [30].</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Changes in working time arrangements</th>
</tr>
</thead>
<tbody>
<tr>
<td>A change in working hours was defined as a change from ≥36 h/week at T3 to &lt;36 h/week at T6. A change in work schedule was defined as a change from shift work at T3 to day work at T6. In this study, day work captured normal working hours between 7 a.m. and 7 p.m. Shift work was</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline characteristics of the study populations for prolonged fatigue, need for recovery, and psychological distress, and frequency of changes in mental health between T0 and T3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Prolonged fatigue</th>
<th>Need for recovery</th>
<th>Psychological distress</th>
</tr>
</thead>
<tbody>
<tr>
<td>No case T0</td>
<td>No case T0</td>
<td>No case T0</td>
</tr>
<tr>
<td>Baseline (T0) characteristics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total, n</td>
<td>6827</td>
<td>5897</td>
</tr>
<tr>
<td>Male, n (%)</td>
<td>5128 (75.1)</td>
<td>4352 (73.8)</td>
</tr>
<tr>
<td>Age, mean (S.D.)</td>
<td>41.58 (8.70)</td>
<td>41.59 (8.72)</td>
</tr>
<tr>
<td>Education, n (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>1219 (18.4)</td>
<td>1059 (18.5)</td>
</tr>
<tr>
<td>Medium</td>
<td>3020 (45.5)</td>
<td>2651 (46.2)</td>
</tr>
<tr>
<td>High</td>
<td>2399 (36.1)</td>
<td>2022 (35.3)</td>
</tr>
<tr>
<td>Frequency of changes in mental health between T0 and T3, n (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incident cases of prolonged fatigue at T3</td>
<td>807 (12.0)</td>
<td>774 (14.0)</td>
</tr>
</tbody>
</table>
defined as three-shift, four-shift, five-shift, or irregular shift work, all including frequent night work.

Occupational mobility

Occupational mobility was divided into internal mobility and external mobility. Internal mobility was defined as a job change within the company and was assessed every 4 months with one item asking employees whether they changed their job function in the past 4 months (no/yes). External mobility was defined as a change in jobs from one employer to another and was assessed every 4 months with one item asking employees whether they changed employers in the past 4 months (no/yes).

Confounders

Information on gender, age (continuous), and educational level was obtained through self-report in the baseline questionnaire. Educational level was measured according to the highest level of education the person completed and was recoded in three categories: low (primary and lower vocational school), medium (lower secondary school, intermediate vocational school, and secondary school), and high (higher vocational school and university). Because psychosocial characteristics may be associated with a change in mental health between T0 and T3, and may also cause employees to change their job function arrangements or to change jobs, we controlled for psychological job demands, decision latitude, and co-worker and supervisor support at T3. These psychosocial work characteristics were measured with a Dutch version of the Job Content Questionnaire [31,32]. Psychological job demands were assessed by the sum of the following two subscales: skill discretion and decision authority. Response options on the two scales varied from strongly agree to strongly disagree on a 4-point scale. Social support was assessed by the following two scales, each consisting of four items: supervisor support (Cronbach’s alpha .85) and co-worker support (Cronbach’s alpha .75).

Statistical analysis

The effects of deteriorated health on changes in working time arrangements were assessed by means of logistic regression analyses. The effects on occupational mobility were assessed by means of Cox regression analyses.

Logistic regression analyses

When examining the effect of deterioration in mental health between T0 and T3 on changes in working time arrangements, changes in working hours were assessed by means of logistic regression analyses. The effects on occupational mobility were assessed by means of Cox regression analyses.

Cox regression analyses

When examining the effect of deterioration in mental health between T0 and T3 on internal mobility (a change in job function within the company), changes were assessed by means of Cox regression analyses.
employees reporting internal mobility between T0 and T3 were excluded from the analyses. When examining the effect on external mobility (and changing jobs from one employer to another) between T3 and T8, all employees reporting external mobility between T0 and T3 were excluded from the analyses. Multivariate survival analyses using Cox regression were performed, in which we modelled the time to first job change at T4, T5, T6, T7, or T8. In all the analyses, the reference group consisted of employees not being a case of the mental health measure at both T0 and T3. Relative risks (RRs) and 95% CIs were calculated for both internal and external mobility, adjusted for age, gender, education, psychological job demands, decision latitude, and co-worker and supervisor social support. All analyses were performed using the SPSS 13.0 statistical packages [33].

**Results**

**Frequency of changes in mental health**

Because cases of the respective mental health outcomes at baseline were excluded, three study populations were considered for this study, consisting of 6827 employees for prolonged fatigue, 5897 for need for recovery, and 6828 for psychological distress. Within these three groups, there were 807 (12%) incident cases of prolonged fatigue, 774 (14%) incident cases of need for recovery, and 961 (14.2%) incident cases of psychological distress after 1 year of follow-up (T3).

**Effects of deterioration in mental health on changes in working time arrangements**

Table 2 shows that, after correction for possible confounders, becoming a fatigue case significantly predicted a reduction of working hours per week from ≥36 to <36 h/week (OR 2.49; 95% CI 1.42–4.35). Moreover, becoming a need for recovery case also predicted a reduction of working hours to <36 h/week (OR 2.83; 95% CI 1.53–5.26). Becoming a psychological distress case was not significantly associated with a reduction of working hours.

Table 3 shows that a change in work schedule from shift work to day work was significantly predicted by increased levels of fatigue, even after correction for gender, age, education, psychosocial work characteristics, and work schedule T0. A change in work schedule from day work to shift work was significantly predicted by decreased levels of fatigue, even after correction for gender, age, education, psychosocial work characteristics, and work schedule T0. A change in work schedule from shift work to day work was not significantly predicted by decreased levels of fatigue, even after correction for gender, age, education, psychosocial work characteristics, and work schedule T0.

**Effect of deterioration in mental health between T0 and T3 on internal occupational mobility between T3 and T8**

Table 4 shows that, after correction for possible confounders, becoming a fatigue case significantly predicted a change in internal occupational mobility between T3 and T8 (OR 1.15; 95% CI 1.00–1.40). Moreover, becoming a need for recovery case also predicted a change in internal occupational mobility between T3 and T8 (OR 1.44; 95% CI 1.25–1.66). Becoming a psychological distress case was not significantly associated with a change in internal occupational mobility between T3 and T8.

---

Table 3

<table>
<thead>
<tr>
<th>Deterioration in health</th>
<th>Change in work schedule from shift work at T3 to day work at T6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
</tr>
<tr>
<td>Prolonged fatigue</td>
<td></td>
</tr>
<tr>
<td>T0: no case; T3: no case\textsuperscript{†}</td>
<td>85</td>
</tr>
<tr>
<td>Need for recovery</td>
<td></td>
</tr>
<tr>
<td>T0: no case; T3: no case\textsuperscript{†}</td>
<td>65</td>
</tr>
<tr>
<td>T0: no case; T3: case</td>
<td>14</td>
</tr>
<tr>
<td>Psychological distress</td>
<td></td>
</tr>
<tr>
<td>T0: no case; T3: no case\textsuperscript{†}</td>
<td>85</td>
</tr>
<tr>
<td>T0: no case; T3: case</td>
<td>15</td>
</tr>
</tbody>
</table>

\textsuperscript{a} Unadjusted.  
\textsuperscript{b} Adjusted for gender, age, and education.  
\textsuperscript{c} Additionally adjusted for psychological job demands, decision latitude, and co-worker and supervisor social support T3.  
\textsuperscript{d} Additionally adjusted for work schedule T0.  
\textsuperscript{†} Reference group.

---

Table 4

<table>
<thead>
<tr>
<th>Deterioration in health\textsuperscript{†}</th>
<th>Internal occupational mobility</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
</tr>
<tr>
<td>Prolonged fatigue</td>
<td></td>
</tr>
<tr>
<td>T0: no case; T3: no case\textsuperscript{†}</td>
<td>916</td>
</tr>
<tr>
<td>T0: no case; T3: case</td>
<td>134</td>
</tr>
<tr>
<td>Need for recovery</td>
<td></td>
</tr>
<tr>
<td>T0: no case; T3: no case\textsuperscript{†}</td>
<td>697</td>
</tr>
<tr>
<td>T0: no case; T3: case</td>
<td>139</td>
</tr>
<tr>
<td>Psychological distress</td>
<td></td>
</tr>
<tr>
<td>T0: no case; T3: no case\textsuperscript{†}</td>
<td>849</td>
</tr>
<tr>
<td>T0: no case; T3: case</td>
<td>188</td>
</tr>
</tbody>
</table>

\textsuperscript{a} Unadjusted.  
\textsuperscript{b} Adjusted for gender, age, and education.  
\textsuperscript{c} Additionally adjusted for psychological job demands, decision latitude, and co-worker and supervisor social support T3.  
\textsuperscript{†} Reference group.
schedule at T0 (OR 3.44; 95% CI 1.42–8.38). Becoming a need for recovery or a psychological distress case was also associated with higher odds of changing from shift work to day work, but these results were not significant.

Effects of deterioration in mental health on occupational mobility

Table 4 shows that internal job mobility was significantly predicted by increased levels of need for recovery (RR 1.31; 95% CI 1.07–1.61) and psychological distress (RR 1.38; 95% CI 1.16–1.65). Table 5 shows that external job mobility was significantly predicted by increased levels of psychological distress (RR 1.45; 95% CI 1.03–2.03).

Discussion

The results of this study provide evidence for a longitudinal relationship between deterioration in mental health and subsequent change in working time arrangements or occupational mobility. The results of this study suggest that workers try to adapt to the onset of a mental health problem by reducing their working hours, by leaving a shift work job, by changing jobs within the company, or by changing jobs from one employer to another. As expected, different effects were found depending on the mental health concepts studied. Compared to employees not experiencing a deterioration in mental health, employees who became a need for recovery case were more likely to reduce their working hours or change jobs within the company. Employees who became a fatigue case were more likely to reduce their working hours and leave a shift work job. And employees who became a psychological distress case were more likely to change jobs within the company as well as to change jobs from one employer to another. This might have something to do with the nature of the concept and the seriousness of the complaints involved. With respect to need for recovery and prolonged fatigue, it seems that more short-term solutions are being sought, whereas more permanent, structural solutions are being sought with respect to psychological distress. For further research and prevention, the effects of a wide range of health measures may be studied as different health concepts may have different effects.

Time lag

In this study, we examined the effects of a deterioration in mental health between baseline and 1-year follow-up on a change in working time arrangements between 1- and 2-year follow-up. It is, however, possible that this time period does not exactly match the time needed for a change in health to establish the strongest effect [34]. It is possible that employees have to be ill for several months before they decide to change their work situation. Employees becoming a case rather quickly after baseline and still being a case at 1-year follow-up may then decide to reduce their working hours. It is also possible that, for employees whose health was already deteriorating rather quickly after baseline, changes in the work situation may have already set in before our 1-year follow-up measurement (T3). Because we wanted to unravel the relationship in time, we excluded employees who, for example, already worked <36 h/week at T3. Although these people may have already changed their work because of ill health, they were excluded from the analyses to enable us to actually separate a change in exposure from a change in the outcome over time. Consequently, the results of this study may be an underestimation of the actual effects of mental health on work.

Specific subgroups and confounders

When considering the effects of changes in health status, one might wonder whether the effects are different for certain subgroups, such as chronically ill patients. In preliminary analyses, we examined interaction effects with gender, the presence of a long-term illness, and sickness absence, but as none of these interactions was significant, the analyses in this
study were not stratified for any of these factors. We then considered these factors as possible confounders. We examined whether correcting for the presence or the onset of a long-term illness caused a relevant (>10%) change in the regression coefficients, but as they did not, the correction for long-term illness was left out of the analyses. The correction for gender was retained. Additionally, we did not correct for sickness absence in this study as this might eliminate the difference between people with deteriorated health who did and those who did not report sick from work.

In this study, we examined the effects of becoming ill (i.e., becoming a case of a particular mental health measure), irrespective of the cause of this illness. Therefore, we did not correct for changes in psychosocial work characteristics between T0 and T3, such as a change in psychological job demands. Suppose increasing job demands between T0 and T3 increases a person’s level of fatigue. Correcting for this change in demands would mean a correction for the cause of becoming ill, thereby reducing part of the effect of deteriorated health on the work situation. Continuing on this, we would have to correct not only for psychological job demands, but also for interpersonal conflicts, work–family conflicts, life events, etc. The question then remains, “on the basis of which factors are employees allowed to get ill?” We did, however, control for the T3 value of the psychosocial work characteristics because the level of, for example, job demands may both be associated with a change in mental health between T0 and T3, and may also cause an employee to change the work situation. We are, however, aware of the fact that even controlling for the T3 value is a rather rigid correction which might result in underestimation of the actual effect of changes in mental health on changes in characteristics of the work situation. Despite the fact that a broad range of possible confounders was carefully considered in this study, the possible existence of unidentified confounding factors cannot be completely ruled out.

**Cut-off points**

Previously established cut-off points for the mental health measures were used in this study [25,26,30]. To ensure that the results were not driven by the choice of the cut-off points for defining cases of the respective mental health measures, sensitivity analyses using adjacent cut-off points were performed. In general, sensitivity analyses showed that the strength of the effects found in this study was not substantially altered by the choice of the cut-off point. Only when a cut-off point of 7 out of 11 items on the need for recovery was used did the effects on changes in work schedule substantially change. In that case, becoming a need for recovery case significantly predicted a change from shift work to day work (OR 3.26; 95% CI 1.31–8.08).

**Nonresponse and selective loss to follow-up**

Although reasonable for survey in a working population [35], the baseline response of 45% might raise the question of selective participation which may have threatened the external validity of this study. Nonresponse analyses at baseline yielded no significant differences between respondents and nonrespondents regarding demographic characteristics. Nonrespondents were somewhat less likely to report fatigue complaints at baseline [18]. A selective participation of employees could thus not be totally ruled out and one should be careful with generalizing the results of this study to other populations. Additionally, the loss to follow-up over time might raise the question of selective dropout, which may have threatened the internal validity of our results. We examined whether employees whose health deteriorated between baseline (T0) and 1-year follow-up (T3) were less likely to respond to the 2-year follow-up questionnaire (T6). No significant differences existed between respondents and nonrespondents at T6 with respect to becoming a case on the need for recovery or the psychological distress scale between T0 and T3. Employees becoming a prolonged fatigue case between T0 and T3 were, however, somewhat less likely to respond to the questionnaire at T6. As employees becoming fatigued between T0 and T3 have a higher probability of changing their work situation, the results might be an underestimation of the actual effect of increasing levels of fatigue on changes in working time arrangements and occupational mobility.

**Strengths**

Although the above considerations need to be taken into account when interpreting the results, the strengths of the study should be mentioned as well. This study was based on longitudinal data from a large sample of employees, with repeated measurements on work conditions and mental health. Looking at reversed causality, this study turns over the usual sequence investigated in previous studies. It examines whether mental health influences characteristics of the work situation by separating change in exposure (deterioration in mental health) from change in the outcome (changes in the work situation) over time using relatively short time intervals, and taking into account several possible confounding factors. As this study found relatively large and statistically significant effects of changes in mental health on changes in working time arrangements and occupational mobility over time, we conclude that the results of this study indicate a possible causal relationship between mental health and characteristics of the work situation.

**Policy implications**

The results of this study may provide important insights for prevention strategies in the workplace as well as for human resource specialists. So far, transitions in the work situation have been related to the characteristics of the job itself, such as salary, learning opportunities, job demands, or work–family conflict. This study shows that mental health also seems to be an important predictor of changes in the
work situation. This finding is important for primary prevention strategies, aimed at preventing people from becoming ill, as this may reduce the likelihood of job transitions and job turnover. For occupational health professionals, it is important to regularly assess the mental health of employees in order to be able to detect changes in mental health, as they may be an important predictor of future changes in working time arrangements or may be an antecedent of future occupational mobility. For human resource specialists, it might be interesting to provide employees with the opportunity to change their work situation, to give them information on the possibilities to change, or to provide skills for workers to facilitate a successful change. Providing opportunities to change jobs or change working time arrangements might enable employees to remain in the labor force instead of leaving it because of deteriorated health. This may become increasingly important for the near future, as with the ageing of the workforce more health problems will probably arise in the working population. For future research, it might be interesting to examine the effects of deteriorated health on the work situation in a sample of older workers. It might also be interesting to examine whether these adaptations to ill health in terms of changing working time arrangements or occupational mobility prevent employees from leaving the labor force in the long run.

References


