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Do psychological job demands, decision control and social support predict return to work three months after a return-to-work (RTW) programme? The rapid-RTW cohort study

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ABSTRACT

BACKGROUND: Long-term sickness absence is a considerable health and economic problem in the industrialised world. Factors that might predict return to work (RTW) are therefore of interest.

OBJECTIVE: To examine the impact of psychosocial work characteristics on RTW three months after the end of a RTW programme.

METHODS: A cohort study of 251 sick-listed employees from 40 different treatment and rehabilitation services in Norway recruited from February to December 2012. The Job Content Questionnaire was used to gather information on the psychosocial work conditions. Full or partial RTW was measured three months after the end of the RTW programme, using data from the national sickness absence register. Logistic regression analyses were performed to investigate the association between the psychosocial work characteristics and RTW.

RESULTS: Having low psychological job demands (OR= .4, 95% CI: .2-.9), high co-worker- (OR=3.4, 95% CI: 1.5-5.8), and supervisor support (OR=3.4, 95% CI: 1.6-7.3), and being in a low-strain job (low job demands and high control) (OR=4.6, 95% CI: 1.1-18.6) were predictive of being in work three months after the end of the RTW programme, after adjusting for several potential prognostic factors.

CONCLUSION: Interventions aimed at returning people to work might benefit from putting more emphasise on psychosocial work characteristics in the future.

Keywords: The rapid-RTW-study, sick leave, sickness absence, demand-control-support model, psychosocial work environment, job strain

1. Introduction

Long-term sickness absence is a considerable public health and economic problem in the industrialised world (1, 2). Research on the onset of sickness absence has revealed that a relatively small group of workers is responsible for most of the sickness absence (3-5), and that this group disproportionally contributes to the costs of sickness absence (1, 3, 6). One study showed that only 10% of the sick-listed employees contributed to as much as 82% of the sickness absence (5).

In Norway, the sickness absence rates are high compared to other countries (4). In 2011, the expenditure of sickness benefits was estimated to approximately 36.4 billion Norwegian kroner (approx. US $6.5 billion or US $1.300 per capita) (7). Because of production losses and other financial costs to the government and industry, sickness absence is a topic high on the political agenda.

In addition to economic consequences, long-term sickness absence can affect the worker's health, as well as inhibit recovery (8). Several negative consequences of prolonged sick-leave have been found, including increased risk of mortality (9-12), suicide attempts (13), disability pension (14, 15), social isolation, inactivity (16-18), depressive symptoms (17, 18), reduced well-being (8), impaired self-image (16, 17), and a tendency to become stuck in a negative sick role (8, 16). Some of this may, in turn, reduce the probability of returning to work (8, 17, 19). As the sick leave is prolonged, the perceived distance to the workplace can become a challenge in itself, and recovery can be even harder for the absentee (18). In general, the probability of returning to work is inversely proportional to the length of absence from work, regardless of medical condition (6, 20). A rapid and sustainable return to work may therefore often be beneficial, also for the sick-listed worker.

The present study is one of several studies included in the Rapid-RTW study, an evaluation of the Rapid-RTW programme in Norway. The Rapid-RTW programme is a national RTW service established in 2007, and is to this date the largest effort for promoting return to work in the country (21). So far, the costs for this programme alone have reached more than NOK 5.5 billion (US $9.2 million). The government funds the programme, and both the specialist health care and the national social insurance office are responsible for the organisation and administration of the programme. The programme includes approximately 250 different RTW services, offering everything from medical and surgical treatment in clinics, rehabilitation in hospitals (somatic), psychiatric treatment and rehabilitation, occupational training and rehabilitation in institutions, in addition to follow-up and clarification of work abilities (21). The goal is to contribute to a faster return to work for employees on sick leave, through faster assessment, medical treatment, and rehabilitation. There have been few administrative guidelines for what the services should include, or how they should be organised, and the interventions have therefore differed from service to service. One objection to these services has been that they do not give enough attention to workplace aspects or work characteristics. It is therefore of interest to investigate whether perceived work characteristics might have an impact on RTW-rates for sick listed employees, after controlling for different confounding factors.

Over the last centuries, increasing attention has been placed on psychosocial factors in the workplace in the development of ill health and duration of disability. Psychological stress has been the focus of an increasing amount of research (22-26). One of the most widely used models in the stress field of research has been the demand-control-support (DCS) model (19, 23, 24, 27-31). The concept of demand and control was introduced by Karasek in 1979 (32),

and further developed by Karasek and Theorell during the 1980's (24). In 1988, Johnson and Hall further extended the model by including the dimension of social support (24, 33). Accordingly, the DCS-model focuses on three aspects of *psychosocial work characteristics*; psychological job demands, decision control and social support. In the model, psychological demands refer to work pressure and work load, whilst control (or decision latitude) consists of two theoretically distinct scales concerning the breadths of skills on the job (skill discretion) and the social authority each worker has over making decisions (decision authority). Social support is measured through co-worker and supervisor support, with both sub-scales reflecting socio-emotional and instrumental support. By combining high and low levels of demands and control, four distinctly different kinds of psychosocial work experiences (also called job types) are generated; high-strain jobs (high demands and low control), low-strain jobs (low demands and high control), active jobs (high demands and high control), and passive jobs (low demands and low control).

The DCS-model and the job strain hypothesis propose that high-strain jobs have adverse health effects. If, however, the challenges in the workplace are matched with the individual's control over alternatives or skill in dealing with those challenges, learning, motivation and growth are likely outcome (the active learning hypothesis) (24). Social support is considered to counteract stress at the workplace and to decrease the risk of illness, as it is thought to improve the person's resilience to stressors. Because RTW can be considered not only a point in time or a type of work status (27), but as a measure of recovery (19, 20, 28, 34, 35), or a personal process, it is possible that work characteristics might also predict recovery as measured by RTW.

Another model gaining attention in the RTW research is the Illness Flexibility Model. In the model it is postulated that whether a person is sick-listed or not, is a function of the decision to go to work (36). However this choice is not only affected by the person's disability, but by a function of different factors outside the individual. These factors include the person's work capacity, the adjustment possibilities available (adjustment latitude) in the job, incentives of staying at work or at home, as well as the absence requirements in the job (36, 37). Research on the Illness Flexibility Model has shown that sick-listed employees who have the opportunity to adjust their work demands, have higher RTW-rates than other employees (37). Adjustment latitude includes nine adjustment possibilities: the possibility of postponing work, work at a lower pace, take longer breaks, shorten the workday, work undisturbed, go home early and do the work later, or work from home. The Illness Flexibility Model can be seen in connection with the DCS-model, as the levels of work flexibility can be viewed as an opportunity for increased control in regard to reduced workload and time pressure, and increased levels of decision authority (18).

In previous research on job characteristics and RTW, the focus has predominantly been on organizational and physical characteristics (38-41), to a lesser extent examining other aspects of the workplace. However, newer studies on barriers to RTW have found that other aspects might be important in a RTW-process. A qualitative study by Aas and colleagues. (2011), for example, found that emotional and cognitive demands were experienced as the most predominant barriers in regard to RTW (42). Studies investigating the relationship between work characteristics, sickness absence, and RTW have found an association between high job demands, low decision control, and delay in RTW. In addition, high-strain jobs have been found to be predictive of not returning, whereas mixed results have been found for active jobs. A study by Gimeno and colleagues (2005), found that reporting high levels of

psychological demands and low levels of decision control increased the odds of long-term sickness absence (34). Another study on RTW in women in the early stages of breast cancer revealed that having jobs with high psychological demands was predictive of not working ten months after primary breast cancer surgery (43). That high job demands alone might function as a barrier for RTW has been found in previous studies (19, 20, 28, 43). In other studies, however, the association between low control and delayed RTW has been the most clearly established determinant (35, 44). Inconclusive results have also been found for social support and RTW (40). Although most studies support the association between high social support and RTW (45), Post et al. (2005) found a relation between high social support and delay in RTW (46). In accordance with the strain hypothesis, the interference of high-strain jobs on RTW has been fairly well established. However, the other job types have shown mixed results. In a study by Jansen et al. (2003) for example, active jobs were found to have a positive association with RTW (19), whereas Lidwall and Marklund (2006) found that active jobs were associated with long-term sickness absence in women (47). Because of the inconsistent findings, strong evidence for any of the work dimensions has not been established. Nevertheless, the research underlines the importance of considering work related psychosocial characteristics in explaining a worker's RTW. The impact of work characteristics on RTW was therefore explored in this paper.

2. Aim

The aim of this study was to assess the association between psychosocial work characteristics and RTW after the end of a RTW programme. Four hypotheses were stated: 1) high psychological job demands will prevent RTW; 2) high control will promote RTW; 3) high social support will promote RTW; and 4) individuals with active jobs will return to work more often than individuals in high-strain jobs, low-strain jobs or passive jobs.

3. Material and methods

3.1 Design

The study was conducted as a cohort study of sick-listed employees (n = 251) who had participated in 40 different Rapid-RTW services in Norway, during February to December 2012. Data on work characteristics was collected through self-report questionnaires, one week before the programme ended. National register data on sickness absence was used to calculate RTW-rates three months after the end of the programme.

3.2 Data collection

Each clinic or institution offering a Rapid-RTW programme was contacted by mail, and invited to participate in the study. Of 250 active Rapid-RTW services, 40 agreed to participate. Each RTW service entailed a local study coordinator, who further recruited the employees in the programme by providing them an invitation letter to participate in the study. For those who agreed to participate, both the employees and their providers answered questions on self-report questionnaires concerning socio-demographic conditions, health and functioning, the service's content, organisation and coordination, as well as various aspects of the workplace. As the interventions were independently customized for each of the employees, the length of treatment or rehabilitation varied individually, but also according to which service the employee received treatment in. The stage in the RTW-process at which the employee filled in the self-report questionnaires would therefore vary.

Data on sickness absence was retrieved from the Norwegian Social Insurance Register (FD-Trygd), a database concerning social security benefits as sickness absence and disability pension, and other related statistical data. The register data was linked to the self-report data

using eleven-digit personal identification numbers, retrieved from the participants in the study.

3.3 Study sample

A total of 353 persons were included in the study. Of these, 251 participants met the inclusion criteria of (1) finishing treatment at the RTW service before or during the study period; (2) being on sick leave when they started treatment at the RTW service; and (3) being in paid employment (not self-employed). Because we were not allowed to store records on who were given invitations or who denied participation, we did not have information on non-responders.

Table 1 presents the baseline characteristics of the study sample, and the type of treatment the employees received. The sample consisted mostly of women (76.1 %), and the majority of employees were reported as having musculoskeletal disorders (57.4 %). Of the participants included, 60.6% (n = 152) received multidisciplinary treatment, while 4.3% (n = 11) received treatment from only one profession. The most common type of treatment was medical or surgical treatment (37.1 %), including pre-operational assessment. The median duration of the RTW services was 34 days (mean 53.4 days, SD: 47.4).

Insert table 1 here

3.4 Measures

The psychosocial work characteristics were measured by a Norwegian translation of the job content questionnaire (JCQ), a standardised questionnaire that measures all three of the DCS dimensions. Psychological job demands were measured with five items (with possible scores on the scale ranging from 14-48, with a Cronbach's alpha of .73). Decision control was

measured with six items on *skill discretion* (range 12-48, Cronbach's alpha .64), and three items on *decision authority* (range 12-48, Cronbach's alpha .60). Social support was measured with four items on *co-worker support* (range 4-16, Cronbach's alpha .81), and four items on *supervisor support* (range 4-16, Cronbach's alpha .91). All the job characteristic items were scored on a four-point Likert scale, ranging from 1 'strongly disagree' to 4 'strongly agree'. There are several ways of calculating the sum scores of the DCS-model, however, the most common way is by using the quadrant term (48). In accordance with this, the sum scores were created by dichotomising the variables at the median, indicating high and low levels of each dimension. Values equal to the median were classified into the less hazardous exposure level (that is, low demands, high control, or high social support). The four job types were then created by cross-classifying the dichotomised variables of psychological job demands and job control: high-strain jobs (high demands and low control), low-strain jobs (low demands and high control), active jobs (high demands and high control) and passive jobs (low demands and low control).

RTW was measured three months after the employees had ended the RTW service using register data. The register data on sickness absence lists the beginning and end dates of each period of sick-leave for each employee, in addition to the degree of absence measured in per cent. Based on previous studies on RTW (20, 49), we chose to measure RTW as starting back at work for more than 50 %, as our results then would be comparative to previous research.

3.5 Potential confounders

Age, gender, educational level, marital status, household income, diagnose, sick leave history, work status at the end of the programme, type of treatment, occupational sector and physical job demands were considered potential confounders, as these have been shown to affect

duration of sick-leave in earlier studies (18, 46, 50). Each potential confounder was tested separately in bivariate analyses, and non-significant factors were manually eliminated until the regression model reached statistical significance for each of the predictor variables. All the confounders were measured through self-report at baseline.

3.6 Statistical analyses

SPSS version 20 was used for all the analyses. Significant results were defined as $p < .05$. Return to work (yes vs. no) was the dependent binary variable. First, each item in the JCQ was tested separately in bivariate analyses. Then, unadjusted regression models were run separately for each of the DCS-dimensions and RTW, as well as for the job-types. Finally, separate logistic regression models were calculated for each of the DCS dimensions and for the job-types, adjusted for the confounders.

3.7 Ethical considerations

The study was approved by the Norwegian Social Science Data Service (NSD), and consent to handle person identified information was given by the Norwegian Data Protection Authority (Datatilsynet).

4. Results

Three months after the RTW service ended, 76.1% of the sample had returned to work. Those back to work were characterised by a higher proportion of individuals with low psychological demands, high control and high social support. Table 2 presents the results from the logistic regression analyses, both unadjusted and adjusted for the confounders for both the work dimensions and the job types.

4.1 Unadjusted results

The unadjusted results showed an association between psychological job demands and return to work. An association was also found for social support and RTW, as well as for the sub-scales *co-worker* and *supervisor support* and RTW. A statistically significant association was also found for low-strain jobs as well as for high-strain jobs (high psychological demands and low decision control) and RTW, reporting OR's of 2.6 (95% CI: 1.0-6.6) and 0.4 (95% CI: 0.2-0.9) respectively.

4.2 Adjusted results

After adjusting for the confounders, the association between the job characteristics and RTW was further confirmed, with psychological job demands reporting an OR of 0.4 (95% CI: 0.2 - 0.9). Associations were also found between social support and RTW (OR of 2.7; 95% CI: 1.3 - 5.8), including for both the sub-dimensions *co-worker support* (OR of 3.4; 95% CI: 1.5 – 7.9) and *supervisor support* (OR of 3.9; 95% CI: 1.6 – 7.3). No support was found for a relation between decision control and RTW, or for either of the sub-dimensions *skill discretion* or *decision authority* and return to work. However, when testing the job-types, individuals with low-strain jobs (low psychological demands and high control) showed a significant association with RTW, reporting an OR of 4.6 (95% CI: 1.1-18.6). Persons with low-strain jobs also had the highest RTW-rates, with 87.9% of individuals in this category having returned to work at the three-month follow-up.

Insert table 2 here

Table 3 presents the summary statistics of the association between each item in the JCQ and return to work. The items concerned with co-worker's interest ($p<0.001$), helpful co-workers

(p=0.003) and possibility of making own decisions (p=0.009), had the most significant impact on RTW.

Insert table 3 here

5. Discussion

5.1. Substantive discussion

The aim of this study was to assess the association between the psychosocial work environment and RTW after the end of the programme. The following main findings will be discussed; low psychological job demands, high social support and being in a low-strain job were positively associated with return to work.

Three months after the end of the RTW programme, both low psychological job demands and high social support were associated with higher RTW-rates, whereas the control dimension had no predictive power in our data. High psychological demands, and especially the requirement of working hard, were associated with not working at this follow-up time. Previous research has found that high job demands in themselves are not necessarily perceived as negative (51). In fact, most of the time high demands are associated with positive outcome like motivation and growth, and is only considered to have negative effects when combined with low control (24). In a RTW situation, however, it is possible that the work demands are perceived as extra demanding, as the sick-listed worker might experience impaired job performance as a result of his or her disability (45, 52). In addition, there is a possibility that high demands induce a fear of recurring or worsening the health complaints for which one called sick to begin with (19), regardless of adjustments made to the workplace.

This explanation is supported by Krause et al. (2001), who found that high psychological job demands alone contributed to a 20% reduction in RTW-rates (35).

The fact that decision control had no apparent predictive power in this study was an unexpected finding, as this has been the most clearly established predictor of RTW in previous studies (19, 20, 35, 44). Krause et al. (2001) for example found that low decision control alone reduced the chances of returning to work with up to 30% (35), and Niedhammer et al. (1998) found that decision control was the only predictor of RTW (44). A study by Ballabeni et al. (2010), however, supports the finding that decision control has no association with RTW (28). Several explanations regarding the lack of association of control in the present study can be considered. One might be the low reliability on the scales measuring the control dimension (Cronbach's alpha of .64 on the skill discretion scale and .60 on the decision authority scale). In the social and health sciences, an alpha value above .7 is considered acceptable while an value of .8 is preferable (53). Although the Cronbach's alpha is sensitive to the number of items on the scale, other research using the JCQ have found higher scores on the sub-dimension (24, 54). This might indicate that there was low consistency between the respondents' answers in the questionnaire, thereby eliminating the predictability of the dimension. In addition, it is possible that control is restricted to working as a buffer against the effects of the psychological job demands (55), thereby not making a significant contribution on RTW when seen isolated. Another explanation might be Norwegian culture and legislations concerning work structure and work environment. Since the 1970's legislations around the working conditions in Norway have been concerned with the organisation and construction of the work environment. In 1977 a working environment act was established focusing on labour issues and new knowledge about the work environment's harmful effects on human health. Attention was directed at the psychosocial

work environment, and greater emphasis was put on learning and development of skills on the job, as this was found to be a motivating factor, linked to job satisfaction and good health (56). As a consequence, the effect of job control in the RTW-process might be reduced compared to other countries, as the differences between jobs are reduced. Although this may be a feasible contributory factor for why the dimension did not show an association, the possibility of making own decisions did show an association. This makes sense, in that it might be easier for persons with high decision autonomy to regulate their work pace depending on their physical conditions, which in turn might make it easier to return to work.

Social support was found to have the strongest association with RTW, with persons reporting high support being more likely to have returned to work at the three-month follow-up. The largest impact was found for co-worker support, but supervisor support showed an additionally strong association with RTW. The strong impact of social support on RTW has been found in previous studies (19, 28, 35, 45-47), and the association between high social support and higher RTW-rates are fairly well established, although inconclusive findings have been reported (40). Social support is considered having a buffering effect on work-stress, as it potentially improves the person's resilience to the stressor. High levels of social support can improve self-confidence and optimism, as it makes the person feel valued and worthy (24, 57). This might be particularly important in a RTW-process, as the sick-listed worker may experience reduced job performance, impaired self-image and a decreased sense of self-efficacy (8, 45). When the items on the social support scales were investigated separately, the items concerning co-worker's interest, friendliness and helpfulness seemed to have the strongest impact. This supports the results from Lysaght and Larmour-Trode (2008), who reported that moral support, assistance, interest and understanding were the most important factors for whether sick-listed employees returned to work or not (45). Helpful and assisting

co-workers might help reduce some of the work pressure, making the process of returning to work after disease or injury easier. In addition, that co-workers show interest is an indication of emotional support, which is shown to be a buffer for psychological strain (24).

For supervisor support, having a helpful and concerned supervisor was significantly associated with RTW. That helpful supervisors might be essential for securing help from co-workers for physically demanding tasks, for appropriate work assignments, in addition to other work accommodations and adjustment possibilities seems reasonable (35, 45). Furthermore, emotional support from supervisors might make the worker feel important and appreciated, reducing the potential strain in their relationship in the re-entry process (45). Perceived social support at the workplace, can, however, be a modifiable dimension that may be influenced by factors such as increased contact between the employer and the rehabilitation team (28), or between the workplace and the sick-listed worker. A qualitative study by Aas et al. (2008), for instance, found that some leadership qualities, like having a considerate supervisor that provides more contact with the absent worker, were valued by both the sick-listed employees, and their supervisors (58). In the present study, differences in treatment, sickness absence history, and work status were controlled for, and these factors are therefore not thought to have a mediating impact on the results. The importance of co-worker support on sickness absence rates has also been highlighted other studies. In a study by Michie et al. (2004), for example, a theory based organisational intervention was implemented in a hospital cleaning staff, in order to reduce sickness absence rates (59). The intervention included attempting to increase perceptions of social support in the staff, by allowing for more social action in the workplace. The intervention proved fairly successful, and the sickness absence rates were reduced following the intervention.

After adjusting for several potential prognostic factors, being in a low-strain job was the only job-type associated with RTW. In earlier studies, low-strain jobs have been shown to predict lower than average psychological strain and risk of illness (24), as the high levels of decision latitude allows the individual to respond to each workplace challenge optimally. As previously noted, the DCS-model can be seen in combination with the Illness Flexibility Model, as adjustment latitude includes aspects of both psychological demands and control. Research on the Illness Flexibility Model has found that sick-listed employees who have the opportunity to adjust their working conditions, also have higher RTW-rates than employees who do not have that possibility (37). In a study by Johansson (2006), the results showed that the more adjustment possibilities the employee had, the more likely it was that he/she returned to work (60). For persons with high decision control combined with low job demands, it might be easier to go back to work because they have the opportunity to regulate their work depending on their health condition (20), making it easier to adjust the work conditions according to the sick-listed employee's needs. This assumption is supported by Krause et al. (2001), who also found a positive association between decision latitude and work-time flexibility, and RTW (35).

5.2. Methodological discussion

The study was based on the DCS model, and consequently the work characteristics measured were restricted to accounting for the dimensions described in the model. Although the model has received a fair amount of recognition in the field of occupational health, it has also been criticised for its simplicity and lack of relevance facing the modern society's work challenges (61). It is therefore possible that other work characteristics, like for instance attitude towards the job, job insecurity, job satisfaction, motivation and physical work characteristics might reveal a more complete picture of the determinants of return to work. This should therefore be

taken into consideration in future research regarding RTW. Furthermore, as with all other questionnaires attempting to measure psychological work stress, the JCQ is susceptible for certain personality traits in the mapping of psychosocial working conditions (61, 62). Awareness that the person's response to a specific question is a function of both the objective presence of the factor and the subjective appraisal by the person is therefore important. Moreover, the psychosocial workplace factors in this study were assessed and analysed at the individual level, and exposure to the psychosocial factors are therefore determined by each individuals' response to the specific question (63). An additional concern might therefore also be that the perception of the work environment was based on recall. As perceived social support is extra sensitive in regard to recent contact with the workplace, persons who were on sick-leave at the end of the programme might be biased towards a more negative support experience than persons who recently had contact with their co-workers and supervisor. As both previous sickness-absence history and work status at the end of the programme were controlled for in the regression analyses, they are not considered as having impacted the results regarding perceived social support, nor for perceived demands and control. In addition, as the study was concerned with the further development of occupational rehabilitation programmes, this is not necessarily considered a weakness, as the perception of the work environment in itself is likely to be relevant to the subsequent RTW-process. Information provided by surveys based on the participants' subjective appraisal and recall can be valuable for providers of rehabilitation programmes, as they could provide help in trying to modify the perceptions of the work environment. Ballabeni et al. (2010) for example, found that a remembered previous workplace environment can persist long after a rehabilitation programme is ended, making recalled perception of the workplace as important as the actual work environment (28).

One of the strengths of this study has been the focus on workers sick listed due to any cause. Contrary to previous studies on return to work, this study was therefore not limited to a specific diagnosis, making it possible to generalise the results across different diagnoses. In addition, the study is not limited to one branch or one occupational sector, making it further possible to generalise across different occupations. However, because the study was concerned with the opportunity to generalise across occupation and diagnosis, the differences from previous studies have made comparisons to other research difficult, and no comprehensive conclusion can be drawn at this point in time. Furthermore, since the study used a specific sample of subjects, this could potentially yield different results compared to a study investigating a random sample of employees with medically certified sick-leave. The Rapid-RTW programme might be initially intended for persons who are motivated for returning to work, perhaps making the RTW-rates higher than a random sample of sick-listed employees would have.

A further limitation of the study is that RTW only was measured at short-term follow-up. In order to get a more clear understanding of how the work environment can impact the RTW-process, future research should be aimed at measuring RTW at later stages in the process. In addition, the dichotomised outcome measure of RTW (returned yes/no) at a certain follow-up point ignores any information of when the person has returned, and information about subsequent recurrences and sustainable RTW, limiting the information provided (49). Moreover, the potential confounders controlled for in this study were chosen based on prior literature knowledge, there might therefore be some degree of uncontrolled confounding bias in the results.

6. Conclusion and implications for practice

The results from the present study indicate that there is a relation between the psychosocial work environment, as measured by the demand-control-support model, and return-to-work-outcome. High psychological job demands and low co-worker and supervisor support at work seems to work as independent barriers when returning to work. Being in a low-strain job, however, seems to facilitate return to work. The research on how job characteristics might impact the return-to-work process is scarce and has been fairly inconclusive. More research is therefore needed in order to establish which job-related factors are the most important for return-to-work-outcome. Nonetheless, this study underpins a growing number of studies showing the importance of psychosocial work conditions in a return to work process. We therefore propose that return-to-work programmes should take these issues into account in the future.

In practice, it could be beneficial to include modified work programmes and graded activity aimed at reducing workload and psychological demands. Interventions including modified work redesign, where the employees are enabled more control over their own decisions on how to manage their work might also be advantageous in promoting return to work. Furthermore, as job strain was found to delay return to work, including stress management techniques to return-to-work programmes could be beneficial, as these might be appropriate for modifying the employees' perception of the psychosocial work environment. In addition, having a work-environment with a helpful and including organisational culture and climate seems to have a positive effect on return to work. Return-to-work programmes should therefore target the inclusion of measures for heightening the levels of social support in the workplace.

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