Stressful work, sickness absence and turnover in truck drivers from etiology to prevention

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Summary

Epidemiological research shows that musculoskeletal health complaints and psychological health complaints are prevalent among truck drivers. In fact, these complaints account for almost two thirds of the long spells of sickness absence in Dutch truck drivers. Alongside, these health complaints may compel drivers to search for another job (employee turnover). The primary aim of this thesis was to examine if and how (i.e. through increasing need for recovery after work) stressful working conditions influence future sickness absence and turnover in truck drivers. The secondary aim of this thesis was to validate a model that is useful in describing stressful working conditions of truck drivers and to construct and validate a questionnaire to measure reactions of truck drivers to stressful working conditions (i.e. psychological job strain). Underneath, the studies that were conducted for this thesis are summarized.

Chapter 2 describes a cross-sectional questionnaire study in which the validity of an influential work stress model (Job Demand-Control Model; JD-C Model) with respect to the statistical prediction of health complaints in 517 Dutch truck drivers (response: 55%) is tested. The interaction hypothesis of the JD-C Model stating that job control buffers the positive "effect" of high psychological job demands on health complaints receives attention in this chapter in particular. The study failed to provide support for the validity of the interactive JD-C Model regarding the prediction of health complaints in truck drivers. Moreover, no substantial independent "effect" of job control on health complaints is found. The findings suggest that the original JD-C Model is insufficient to explain health complaints in truck drivers. It is recommended that future occupational stress research (among truck drivers) should be directed especially at the investigation of the (combined) health effects of a range of occupation-specific job demands and job control aspects.

Chapter 3 describes the results of another cross-sectional questionnaire study among 1,181 Dutch truck drivers (adjusted response 63%). Building on Chapter 2, this study examined the associations between job control, psychological job demands, and two occupation-specific job demands (physical and supervisor demands) on the one hand and concurrently experienced fatigue and job dissatisfaction in truck drivers on the other hand. The inclusion of physical and supervisor job demands in the JD-C Model explains a significant amount of variance in fatigue and job dissatisfaction over and above job control and psychological job demands. However, contrary to the demand-control interaction hypothesis, job control did not statistically attenuate the positive association between job demands and fatigue. Despite methodological limitations (cross-sectional design, use of
self-reports), it is concluded that the inclusion of occupation-specific job demands is a fruitful elaboration of the JD-C Model. The occupation-specific JD-C Model may give epidemiological researchers in the field of occupational stress better insight into the relationship between stressful working conditions and health in truck drivers. Moreover, the JD-C Model may give practitioners more concrete and useful information about stressful working conditions thereby providing points of departure for effective organizational stress reducing interventions.

Chapter 4 describes the results of a prospective cohort questionnaire study among 526 truck drivers in a more or less temporally stable working environment (i.e. drivers who did not change jobs during the 2-year follow-up period). Among these drivers, the relationship between baseline occupation-specific stressful working conditions (see Chapter 3) and the occurrence of sickness absence for more than 14 working days during the second year of the follow-up is examined. Furthermore, the presumed intervening role of need for recovery after work (i.e. the extent to which workers have difficulties to recover adequately from work-related fatigue after a working day) in this relationship is examined. The results failed to support a significant relationship between baseline stressful working conditions and sickness absence. However, the results did show that high baseline need for recovery after work is associated with an increased risk for subsequent sickness absence after adjustment for age, previous sickness absence, marital status, educational level, and company size. Accordingly, it is concluded in this chapter that high need for recovery after work increases the risk of subsequent sickness absence that is not explained by relevant (non) work-related factors.

Chapter 5 outlines the results of the same prospective cohort study as in Chapter 4. However, the exclusion variable of the study described in Chapter 4 (employee turnover) is the outcome variable of the study described in Chapter 5. Specifically, the relationship between occupation-specific stressful working conditions at baseline (see Chapter 3) and employee turnover during the 2-year follow-up period in a cohort of 683 drivers is examined. The univariate results show that the baseline occupation-specific stressful working conditions are predictive of employee turnover two years later. After adjustment for need for recovery after work the significant relation between stressful working conditions and employee turnover disappears. Accordingly, it is concluded in this chapter that: (1) stressful working conditions are an antecedent of turnover in truck drivers and (2) need for recovery after work mediates the relationship between stressful working conditions and employee turnover.
Chapter 6 describes the results of two cross-sectional questionnaire studies conducted to develop and validate a short and user-friendly questionnaire measuring psychological job strain (i.e. short term work stress reactions) in truck drivers. This 10-item questionnaire is labeled the Truckers Strain Monitor (TSM). Factor analyses of the TSM reveal a two-factor solution. In correspondence with these factors, two scales are constructed: a 6-item work-related fatigue scale and a 4-item sleeping problems scale. Results of the studies evidence high internal consistency of the TSM scales and provide support for construct and criterion validity. Regarding the criterion validity, the composite, work-related fatigue, and sleeping problems TSM scale have a sensitivity of 83%, 80% and 71% respectively, in identifying truck drivers with sickness absence because of psychological health complaints during the previous 12 months. The three scales have a specificity rate of 72%, 73% and 72% respectively, in identifying drivers without sickness absence due to psychological health complaints during the previous 12 months.

Chapter 7 describes the results of a questionnaire study among 755 truck drivers examining the psychometric properties of the TSM longitudinally. Specifically, (i) the 2-year test-retest reliability, (ii) the criterion validity of the TSM against future sickness absence due to psychological health complaints and (iii) the usefulness of the distinction between two sub-scales are examined. The TSM scales show satisfactory 2-year stability (test-retest coefficient \( r = .62 - .67 \)). Considering the criterion validity, the work-related fatigue scale, the sleeping problems scale and the composite scale are found to have a sensitivity of 61%, 65% and 61% respectively, in identifying truck drivers with future sickness absence due to psychological health complaints for more than 14 working days. The specificity and positive predictive value of the TSM scales are 77% and 11%, respectively. Furthermore, differential prospective associations between the occupation-specific stressful working conditions on the one hand and the work-related fatigue scale and the sleeping problems scale on the other hand are observed. Alongside, the results described in this chapter show that stressful working conditions are predictive of future sickness absence due to psychological health complaints. It is concluded that the results of this study support the test-retest reliability, criterion validity and usefulness of the TSM two-factor structure. In general, the results suggest that the appliance of occupation-specific psychological job strain questionnaires in occupational stress research is fruitful.

Chapter 8 describes, in the context of the aims of this research, the implications of the findings described in the preceding chapters and addresses methodological issues among which the composition of the study sample, the time frame used and the self-reported assessment of the independent and dependent variables. With respect to the primary
Summary

Aims of this thesis, it is concluded that this thesis shows that (1) the exposure to stressful working conditions predicts the occurrence of long-term sickness absence due to psychological health complaints and voluntary turnover in truck drivers and (2) that need for recovery after work seems to mediate this relationship. At the same time it is concluded that the small effects of stressful working conditions on the outcomes confirm that turnover and sickness absence are multifactorial, complex phenomena. Accordingly, it is suggested that future work stress (intervention) research should pay more attention to the interplay of environmental and individual factors when explaining the relationship between stressful work, sickness absence and turnover. Alongside, this research should include several precisely defined (occupation) specific stressful working conditions and precisely defined health, sickness absence and turnover outcomes.

Also in Chapter 8, the results of this thesis are translated into preventive measures. These measures include the introduction of self-regulating (autonomous) teams in which drivers attain more opportunities to organize work themselves and the reduction of psychological job demands through decreasing the number of working hours (primary prevention). At the secondary preventive level, it is suggested that drivers (with elevated scores on the Trucker Strain Monitor) may be offered a stress management course aimed at the acquisition of skills to cope with the stressful working conditions that are specific for truck driving. For the rehabilitation of drivers who are absent from work due to psychological health complaints (tertiary prevention) recommendations are made as well. In this respect, occupational physicians are requested to pay attention to the drivers' psychological job demands (e.g. time pressure), job control (e.g. influence in planning own work activities) and opportunities to recover after work when assessing the work-related causes of this type of sickness absence. Similarly, the physician is encouraged to consider whether these working conditions hinder the return to work of the driver and, consequently, should be adjusted for an effective rehabilitation.