Summary

Return to work for employees with distress
Cost-effectiveness of the participatory workplace intervention
Work disability due to mental health problems is highly prevalent and very costly. It is important to reduce work disability because of the major personal consequences and the high costs. Interventions for mental health problems often focus on the recovery of symptoms, however, this does not automatically lead to a return to work. Interventions directed to return to work are scarce. Therefore, interventions with involvement of stakeholders from the workplace and directed to work adaptations should be developed and evaluated for sick-listed employees with mental health problems. This thesis focused on workplace interventions and the facilitation of return to work for sick-listed employees, with the main focus on the effectiveness of a participatory workplace intervention for sick-listed employees with distress.

Workplace interventions and return to work

Chapter 2 described a Cochrane systematic review on the effectiveness of workplace interventions in preventing long-term work disability among sick-listed employees with mental health problems, musculoskeletal disorders, and other health conditions. A literature search was performed in the Cochrane Occupational Health Field Trials Register, CENTRAL, MEDLINE and EMBASE (EMBASE.com), and PsycINFO databases. Six randomized controlled trials involving 749 workers were included in the review. In five studies the workers had musculoskeletal disorders and in one study they had mental health problems. The results showed that there is moderate quality evidence to support the use of workplace interventions to reduce sickness absence among workers with musculoskeletal disorders when compared to usual care. However, workplace interventions were not effective to improve health outcomes among workers with musculoskeletal disorders. Unfortunately, no conclusions could be drawn regarding interventions for people with mental health problems and other health conditions due to a lack of studies. In conclusion, care providers could implement workplace interventions in guiding workers disabled with musculoskeletal disorders if the main goal is return to work.

Validity of a distress screener

In chapter 3, the validity of a 3-item distress screener was evaluated. The three items were obtained from the distress subscale of the four-dimensional symptom questionnaire (4DSQ). Total scores on the distress screener range from 0 to 6 points. This chapter assessed an optimal cut-off point and validated the distress screener by relating it to the 4DSQ and to medical diagnoses of occupational physicians. The distress screener and the 4DSQ were received from 171 sick-listed employees. Using the 4DSQ distress score of ≥10 as reference standard, the optimal cut-off point of the distress screener was ≥4 by calculating sensitivity and specificity values. Validity was assessed by relating the distress screener score to the scores on 4DSQ subscales. It was found that a high correlation (0.82) existed between the distress screener and the 4DSQ distress subscale. The correlation between the distress screener and the 4DSQ distress subscale was significantly different from the correlations with the other 4DSQ subscales. In addition, a high score on the distress screener seemed to be related to the medical diagnosis ‘Stress-related
complaints’. All low scores seemed to be related to the medical diagnosis ‘Other complaints’. Sensitivity (0.85) and specificity (0.78) values, and positive and negative predictive values of the screener were comparable to those of the 4DSQ distress subscale. Furthermore, a high correlation existed for the test–retest reliability (0.83). We concluded that the distress screener is a valid instrument for use by the occupational physician during consulting time, as a quick scan for early identification of distress in employees on sick leave.

**Development of a workplace intervention for stress-related mental disorders**
Chapter 4 describes the structured development of a return to work intervention for sick-listed employees with stress-related mental disorders, which is based on an existing successful workplace intervention for sick-listed employees with low back pain. Intervention Mapping was applied to combine theory and practice in the development of a workplace intervention. Employees, supervisors and occupational health professionals were involved in focus group interviews. They indicated that return to work is difficult to discuss in the workplace for sick-listed employees with mental disorders and their supervisors. Therefore, this intervention offers a unique opportunity for the sick-listed employee and the supervisor to discuss barriers for return to work. Intervention Mapping resulted in a structured return to work intervention, specifically tailored to the needs of sick-listed employees with stress-related mental disorders. Return to work was proposed as a behavioural change, and the Attitude, Social influence, self-Efficacy (ASE-)model was identified as a theoretical framework.

**Design of the study**
The objective of chapter 5 is to present the design of a randomized controlled trial evaluating the cost-effectiveness of the workplace intervention compared with usual care for sick-listed employees with common mental disorders. Three companies participated in the study, the VU University, VU Medical Center, and Corus (a steel industry). Employees eligible for this study were on sick leave for 2 to 8 weeks with elevated levels of distress (determined by the distress screener). The workplace intervention is a stepwise approach that aims to reach consensus about a return to work plan by active participation and strong commitment of both the sick-listed employee and the supervisor. Outcomes were assessed at baseline, 3, 6, 9 and 12 months. The primary outcome of this study was lasting return to work, defined as the duration of sick leave with distress in calendar days from the day of randomization until full return to work in own or other work with equal earnings, for at least 4 weeks without (partial or full) recurrence. Sick leave data were acquired from continuous registration systems of the occupational health services after the follow-up. Secondary outcomes were total number of days of sick leave during the follow-up and the severity of common mental disorders.
Feasibility of the workplace intervention
Chapter 6 focused on the feasibility of the workplace intervention for sick-listed employees with distress. The feasibility study concerns part of the study population since not all employees were recruited. The aims were to describe the reach and extent of implementation of the workplace intervention, the satisfaction and expectations of all stakeholders, and the intention to use the workplace intervention in the future. Of the 56 employees with distress eligible to receive the workplace intervention, 40 employees, their supervisors and return to work (RTW) coordinators actually participated in the intervention. They identified 151 obstacles for return to work mostly related to job design, communication, mental workload and person-related stress factors. The 281 consensus-based solutions identified were mostly related to job design, communication and training. Of those solutions, 72% was realized at the evaluation with the employee and supervisor. Overall, employees, supervisors and occupational health professionals were satisfied with the workplace intervention and occupational health professionals rated it with a 7.1 on a 10-point scale. Time investment was the only barrier for implementation reported by the occupational health professionals. The results of this study indicate a high feasibility for a broad implementation of a participatory workplace intervention for sick-listed employees with distress. However, for future use of the workplace intervention, it is recommended to reconsider aspects related to time-investment of the RTW coordinators and the characteristics of employees in relation to occupational physician’s willingness to apply the workplace intervention. Furthermore, reconsideration of the time at which to start the workplace intervention is recommended.

Effectiveness of the participatory workplace intervention
Chapter 7 evaluates the effectiveness of the workplace intervention compared to usual care for employees with distress. In total, 145 employees were randomized to a workplace intervention (n = 73) or to usual care (n = 72). Overall, no effect of the workplace intervention on lasting return to work was found. However, multivariable analysis revealed that the workplace intervention significantly reduced the time until lasting return to work for employees who at baseline intended to return to work despite symptoms. The median time until lasting return to work was 55 days in the workplace intervention group and 120 days in the usual care group. No statistical significant effect of the workplace intervention was found for employees without intentions to return to work despite symptoms (141 days in workplace intervention, 97 days in usual care). The severity of all stress-related symptoms improved significantly over 12 months, but no difference between the groups was found. The results of the stratified analysis should be confirmed in future trials.

Cost-effectiveness of the participatory workplace intervention
Chapter 8 is an economic evaluation of the workplace intervention compared to usual care for sick-listed employees with distress. Cost-effectiveness and cost-utility were evaluated from the societal perspective, and cost-benefit from the employer perspective. The effect
Outcomes were lasting return to work and quality-adjusted life years. Health care utilization was measured over 12 months. The cost-effectiveness and cost-utility analyses revealed no statistical differences in lasting return to work, quality-adjusted life years, or costs. The cost-benefit analysis indicated significant higher cost of occupational health services. Thus, the workplace intervention was not cost-effective. Concerning the subgroup analysis, for the employees with baseline intentions to return to work despite the existence of symptoms, the workplace intervention was significantly more effective and less costly in both the cost-effectiveness analysis and cost-utility analysis. The cost-benefit analysis for this subgroup showed a net monetary benefit of 6243 Euros of the workplace intervention. Widespread implementation of the workplace intervention for sick-listed employees with distress is not recommended because there was no overall economic benefit compared to usual care. Future trials should confirm the cost-effective findings for employees who intended to return to work despite symptoms, as indicated by the subgroup analyses.

**General discussion**

In chapter 9, the findings of this thesis are discussed with regard to current evidence. Furthermore, methodological characteristics of the study are discussed. The participatory workplace intervention focused mainly on external and behavioural determinants for return to work. Cognitions about “being not able to work with symptoms” were not or minimally addressed in the intervention. It is not plausible that work adjustments result in a return to work, when an employee thinks that he or she is not able to work with symptoms. The phase of change with regard to return to work behaviour may be considered before a workplace intervention may be applied. It is hypothesized that cognitive behavioural interventions can change cognitions towards a return to work despite symptoms for employees without a baseline intention to return to work despite symptoms. In case of successful change towards the intention to return to work despite symptoms, the employee may be referred to the participatory workplace intervention.

Furthermore, the findings suggest that working despite symptoms in case of mental health problems is still not considered acceptable by employees, supervisors and occupational health professionals. Societal thoughts about return to work and mental health problems need to shift towards an activating approach.

**Recommendations**

It is essential to get more knowledge about the intention to return to work, and to develop and validate a measurement instrument to assess intention to return to work despite symptoms. Furthermore, differentiation of sick-listed employees based on the intention to return to work despite symptoms and referral to appropriate interventions should be investigated in future research. Sick-listed employees with distress and a baseline intention to return to work despite symptoms can be referred directly to the workplace intervention. A new intervention should be developed for sick-listed employees.
without a baseline intention to return to work despite symptoms to change employees’ cognitions regarding return to work despite symptoms, such as a cognitive behavioural intervention.

The first recommendation for practice concerns the use of the distress screener in consultations of occupational physicians for quick and early identification of distress in sick-listed employees, in order to apply appropriate interventions and prevent long-term sick leave. Secondly, large scale implementation of the participatory workplace intervention for employees with distress is not justified. In accordance with Dutch legislation requirements, occupational physicians may consider a referral to the participatory workplace intervention for sick-listed employees with distress and who planned to return to work with symptoms.