SUMMARY

Work stress can be defined as a state of physical, psychological or social discomfort resulting from work. It can have detrimental consequences at the individual level, the organisational level, and for society at large. Work stress is associated with common mental health problems, such as depression and anxiety, and with burnout, as well as with risks to physical health, such as cardiovascular disease. At the organisational level, work stress is associated with reduced productivity, sickness absence, and exit from work. Prevention of work stress would reduce personal suffering of employees and could financially benefit organisations and society. To prevent work stress, it is important to understand its aetiology. Determinants of work stress have been represented in various influential psychosocial models, such as the Job Demand-Control (-Support) model, the Job Demands-Resources model, and the Effort-Reward Imbalance model. Examples of psychosocial work factors are: social support, autonomy, and psychological demands.

Organisations have a responsibility for and an interest in preventing work stress in employees. Effective interventions aimed at organisational work stress prevention are available, but organisations do not often use these interventions. Making information about organisational stress prevention more accessible and providing guidance in taking appropriate steps in stress management intervention implementation may stimulate organisations to allocate resources to work stress prevention, and may increase organisations’ use of stress management interventions. Objectives of this thesis, as described in chapter 1, were:

1. To investigate determinants of work stress and their association with mental health,
2. To explore work stress prevention needs of important stakeholders,
3. To develop, describe and evaluate the effects of a multifaceted, digital platform-based implementation strategy aimed at the prevention of work stress, and
4. To investigate relevant factors in the process of stress management intervention implementation.

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Determinants of work stress and their association with mental health

Health care workers are exposed to psychosocial work factors. Autonomy and social support are psychosocial work factors that are related to stress, and are argued to largely result from the psychosocial safety climate within organisations. The aim of the study described in chapter 2 was to assess to what extent the relation between psychosocial safety climate and stress in health care workers can be explained by autonomy and social support. In a cross-sectional study, psychosocial safety climate, stress, autonomy, co-worker support, and supervisor support were assessed using questionnaires, in a sample of 277 health care workers. Linear mixed models analyses showed that lower psychosocial safety climate score was associated with significantly higher stress (β = -0.21, 95% CI = -0.27 – -0.14). Neither co-worker support, supervisor support, nor autonomy explained the relation between psychosocial safety climate and stress. Autonomy, together with both social support measures, however, seemed to bring about a small decrease in the relation between psychosocial safety climate and stress in health care workers.

Unfavourable exposure to psychosocial work factors threatens older employees’ mental health, and their sustained employment. The aim of the study described in chapter 3 was to assess whether an improved compared to stable unfavourable and stable favourable exposure to psychosocial work factors is associated with a change in mental health in older employees at 3-year follow-up. The current study used data from the Study on Transitions in Employment, Ability and Motivation (STREAM), in 5,249 workers aged 45–65 years. Two-year exposure was assessed for psychological demands, autonomy, support, mental load, and distributive justice. Linear regression analyses showed that stable unfavourable exposure to psychological demands, autonomy, support, and distributive justice was associated with a significantly lower mental health score than improved exposure. Stable favourable exposure to support was associated with a higher mental health score than improved support, whereas stable unfavourable exposure to autonomy was associated with a
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lower mental health score compared to improved exposure. In conclusion, improvement in unfavourable exposure to psychosocial work factors was associated with improved mental health.

Work stress prevention needs of important stakeholders

The success of work stress interventions depends on proper implementation. Failure to take into account the needs of employees and supervisors can hinder implementation. The study described in chapter 4 aimed to explore employee and supervisor needs regarding organisational work stress prevention. Semi-structured telephone interviews were conducted with seven employees and eight supervisors from different sectors, such as the finance, health care, and services industry. The interviews focused on respondents’ needs regarding the prevention of work stress within an organisational setting. Thematic analysis showed that both employees and supervisors reported a need for: 1) communication about work stress, 2) attention for determinants of work stress, 3) supportive circumstances (prerequisites) for work stress prevention, 4) involvement of various stakeholders in work stress prevention, and 5) availability of work stress prevention measures. Supervisors put greater emphasis on communication about work stress prevention and supportive circumstances for work stress prevention, employees put more emphasis on availability of work stress prevention measures. Employees and supervisors were explicit about who should communicate about work stress, what prerequisites for work stress prevention should exist, and which stakeholders should be involved.

Development, description, and evaluation of a multifaceted, digital platform-based implementation strategy aimed at the prevention of work stress

Adequate implementation of work-related stress management interventions can reduce or prevent work-related stress in organizations. Chapter 5 reported about the development of a multifaceted integral stress prevention strategy for organizations from several sectors, which included a digital platform and collaborative learning network. The digital platform contained a stepwise protocol to
implement work-related stress management interventions, containing the following steps: 1) awareness raising (acknowledgment of the fact that management of work stress is important); 2) assessment (screening for relevant determinants of work stress to target for prevention); 3) planning (setting intervention goals and selecting interventions); 4) implementation (implementing interventions in the organisation); and 5) evaluation (assessing whether goals set in the planning step were achieved). The collaborative learning network, including stakeholders from various organizations, contained planned meetings focusing on an exchange of experiences and good practices among organizations for the implementation of stress prevention measures. Chapter 5 also described the design of an integral stress prevention strategy, Stress Prevention@Work, and the protocol for the evaluation of: 1) the effects of the strategy on perceived stress and work-related outcomes, and 2) the barriers and facilitators for implementation of the strategy. The effectiveness of Stress Prevention@Work was evaluated in a cluster controlled trial, in a large health care organization in the Netherlands, at six and 12 months. An independent researcher matched teams on working conditions and size, and allocated the teams to the intervention or control group. Teams in the intervention group were offered Stress Prevention@Work. For each intervention team, one employee was responsible for applying the strategy within his/her team using the digital platform and visiting the collaborative learning network. Using a waiting-list design, teams in the control group were given access to the strategy after 12 months. The primary outcome was the employees’ perceived stress measured using the stress subscale of the Depression, Anxiety, and Stress Scale (DASS-21). Secondary outcome measures were job demands, job resources and the number of preventive stress measures implemented at the team level.

The objective of the study described in chapter 6 was to investigate the effectiveness of a digital platform-based implementation strategy compared to a control group, on stress, determinants of work stress (i.e. psychosocial work factors) and the level of implementation in health care workers. Thirty teams from a health care organisation were matched and assigned to the intervention group...
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(15 teams; n = 252) or the waiting-list control group (15 teams; n = 221). Teams in the intervention group received the strategy. The primary outcome was stress (DASS-21) and the secondary outcomes were psychological demands, social support, autonomy, and the level of implementation. Questionnaire-based data were collected at baseline, and at 6- and 12-month follow-up. Linear mixed model analyses showed that there was a significant effect of the strategy on stress, favouring the intervention group (B = -0.95, 95% CI = -1.81 | -0.09). No statistically significant differences were found for any secondary outcomes. The strategy showed potential for primary prevention of work stress, mainly explained by an increase in stress in the control group that was prevented in the intervention group.

The aim of the study described in chapter 7 was to evaluate the process and feasibility of a digital platform-based implementation strategy aimed at work stress prevention in a health care organisation. The process evaluation was performed alongside the trial described in chapter 6. Implementation criteria, such as dose delivered, reach, and dose received were assessed. In addition, context, barriers and facilitators, and mental models were measured. Quantitative and qualitative data were gathered using questionnaires, trial records, log information, and interviews. Data, which was gathered from different stakeholders, showed that contextual factors, such as shortage of health care personnel and a recent restructuring of the organisation towards self-management of teams hindered use of the strategy. Low perceived and self-reported management support and high turnover stagnated strategy deployment. This was reflected in team levels of dose delivered (13/15), reach (11/15), and particularly dose received (5/15). Team members rated relatively high on readiness for change, and moderately positive on satisfaction with the strategy. Strategy implementation was only moderately successful, as sustained strategy use by the teams appeared to be a challenge. Factors relevant to this challenge were low management support during strategy deployment, partly due to the recent organisational restructuring towards self-management of teams. The strategy can possibly be feasible with sufficient management support and resources.
Relevant factors in the process of stress management intervention implementation

Despite increasing support for the incorporation of process factors into the evaluation of stress management interventions in the last 10–15 years, there is still limited consensus on which process variables should be assessed. The systematic review described in chapter 8 aimed to explore which process variables have been used in stress management intervention (SMI) evaluation research. The review was conducted using seven electronic databases. Studies were included if they reported on a stress management intervention aimed at primary or secondary stress prevention, were directed at paid employees, and reported process data. Nielsen and Randall’s model for process evaluation was used to cluster the process variables. The three main clusters were context, intervention, and mental models. In the 44 articles included, 47 process variables were found, clustered into three main categories: context (two variables), intervention (31 variables), and mental models (14 variables).

Half of the articles contained no reference to process evaluation literature. The collection of process evaluation data mostly took place after the intervention and at the level of the employee. The findings suggest that there is great heterogeneity in methods and variables used in process evaluations of SMI. This, together with the lack of use of a standardized framework for evaluation, hinders the advancement of process evaluation theory development.

Finally, chapter 9 presented the general discussion. Main findings were discussed, as well as methodological issues, focusing on the evaluation of the Stress Prevention@Work implementation strategy. In addition, perspectives on organisational stress prevention were offered, focusing on the extent to which psychosocial work factors can affect implementation, the reconciliation of stakeholder needs before intervention selection and throughout the implementation process, and the importance of small feedback loops between different stakeholders. Given the findings of the current thesis, the following recommendations could be made:
Recommendations for research

- Use follow-up periods longer than one year to study effects of the strategy or intervention, taking into account psychosocial work factors (proximal outcome) and stress and health outcomes (distal outcome)
- Use more objective measurements of stress and combine them with measurements of work stress determinants, and triangulate different measurements of stress to assess their robustness
- Put greater emphasis on the implementation process in evaluation studies by formulating hypotheses on implementation mechanisms (moving towards a Hybrid Type 2 research design)
- Ascertain which psychosocial work factors affect the process of organisational stress management implementation
- Implement and evaluate the Stress Prevention@Work implementation strategy in other organisations and sectors to gain insight into the generalisability of the present findings beyond female health care workers
- Evaluate the process of stress management interventions at the level of context, intervention, and mental models, gathering information before, during, and after the trial, using multiple sources of information, such as different stakeholders

Recommendations for practice

- Promote reconciliation of stakeholder needs in an early stage (before intervention selection) of the organisational stress prevention process
- Promote sustained use of the strategy in comparable organisations and populations, making sure that teams complete as many steps of the stepwise approach as possible, to optimise dose received
• Pay special attention to management support, turnover, and workload as relevant process factors during future implementation of the strategy

• Use feedback loops during implementation, focused on realignment of stakeholder needs and adjustment of interventions and implementation circumstances