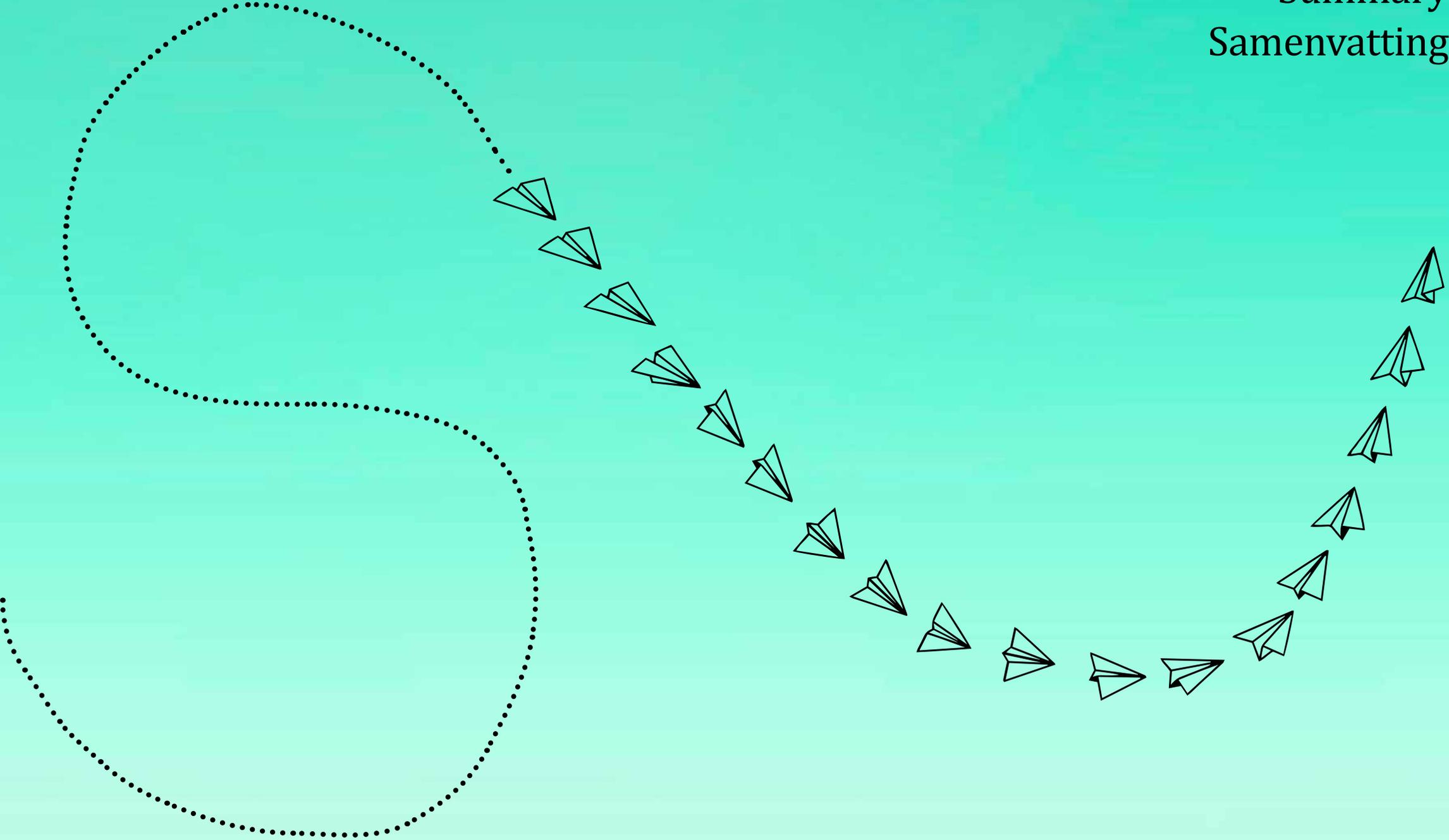


Summary
Samenvatting



Summary

Good education advances our knowledge-based society. Good education will become excellent education if the general level of teaching is improved. And the level of teaching will more easily improve if the school organization is functioning well. However, this improvement in the level of teaching is challenged by the high level of work stress among teachers. Throughout the Western and Eastern developed world, the educational sector is (one of the) front runner(s) in the experience of work stress. European estimates of the stress levels of teachers more than doubled those found in other occupations. Work stress is likely to result in several mental and physical health problems, negative organizational outcomes, and societal costs. These substantial consequences are especially alarming in the light of an already shrinking workforce. Researchers have posed that some of these consequences might be prevented if adequate measures are taken. However, the evidence on the most effective ways to decrease work stress in teachers is inconclusive. To advance our understanding of decreasing work stress, more knowledge on the individual and organizational determinants of work stress for specific occupational groups is needed. Furthermore, methodological issues need to be addressed when implementing interventions, such as determining causality. The objective of this thesis was to explore ways to decrease work stress in teachers, and thereby eventually contribute to excellent education (**chapter 1**). The exploration was conducted along three key questions: (1) How can we decrease work stress in teachers from an individual perspective? (2) How can we decrease work stress in teachers from an organizational perspective? (3) How can we gather the most relevant evidence in intervention studies in the occupational setting, for example to decrease work stress?

How can we decrease work stress in teachers from an individual perspective?

The individual perspective was explored by conducting a longitudinal study with three waves, among 549 older teachers (aged 45-64 years) (**chapter 2**). In this study the role of mastery was studied, as a personal resource for decreasing work stress. Path analysis was applied to explore the interplay between mastery and job demands (i.e. psychological demands and emotional demands) and job resources (i.e. autonomy and social support), in influencing work stress-related outcomes (i.e. depression and work engagement).

Psychological job demands contributed to an increase in mastery; emotional job demands contributed to a decrease in mastery. Psychological demands at baseline (T1) were related to both an increase in depression at T3 (via T2 job demands) and a decrease in depression (via T2 mastery), but not to changes in work engagement. Emotional demands (T1) were related to an increase in depression (T3) and a decrease in work engagement (T3) (partially via T2 mastery). These findings suggest that the type of job demand matters. A job

demand can be either a challenge (a chance for personal growth or development), a hindrance (an obstacle to growth or accomplishment), or a threat (a risk of personal harm or loss). Labeling job demands as challenge, hindrance or threat can help to determine the type of intervention that is best to apply in order to achieve optimal individual and organizational outcomes. Contrary to expectations, job resources were neither longitudinally related to mastery nor to depression or work engagement, and therefore no mediation by mastery was found.

Finally, mastery (T2) was directly related to lower depression and higher work engagement one year later (T3). Increasing mastery in older teachers can be explored further as an intervention strategy to decrease depression and increase work engagement in this occupational group. The findings require replication and actual experimentation.

How can we decrease work stress in teachers from an organizational perspective?

In order to decrease work stress in teachers, a participatory, primary preventive, organizational level intervention was conducted among the employees of two secondary vocational education schools in the Netherlands (school A and school B). The intervention was expert-based, since it was developed by a consultancy firm and applied over a hundred times in both public and private organizations. However, it was never evaluated scientifically. As described in detail in **chapter 3**, the intervention comprised a needs assessment phase (consisting of interviews, a questionnaire, and group sessions) and a phase of implementing intervention activities, which were derived from the needs assessment phase (e.g. structured performance reviews, or creating a staff room). A facilitator supervised the needs assessment phase and he was assisted by a participatory group of employees and staff members. In the phase of implementation of intervention activities the facilitator's help was optional, and only one of the two schools (school A) purchased this aid.

The primary hypothesis was that the intervention would decrease work stress by decreasing need for recovery and increasing vitality (**chapter 4**). The hypothesis was tested in a controlled trial with 356 employees in two schools. The intervention group consisted of 204 employees, in 2 departments, within 24 teams, and the control group consisted of 152 employees, in 2 departments, within 24 teams. Mixed model analysis was applied in order to assess differences between the intervention and control group on average over time. All analyses were corrected for baseline values and several covariates (e.g. gender, educational level). The hypothesis could not be confirmed as no statistical differences were found between the intervention and control group on need for recovery and vitality. Two small but statistically significant effects in unfavorable direction were found on two of the secondary outcomes (i.e. absorption and organizational efficacy). However, post-hoc per protocol analyses demonstrated that employees who participated in at least two of the three steps of the

needs assessment (e.g. questionnaire and group session) had a significantly higher post-intervention score on occupational self-efficacy (i.e. the belief in one's ability at work) than those in the control group, which is favorable. This result indicates that employees with a higher participation grade regarding the intervention might have had a mastery experience, which then positively affected occupational self-efficacy.

The process evaluation in **chapter 5** describes that the lack of positive effects on the primary outcomes could be partly due to implementation failure. Most process evaluations mainly studied the implementation process and the quality of the implementation (fidelity). However, in adopting this approach for participatory organizational level occupational health interventions, important aspects, such as context and participants' perceptions, are missing. Therefore, for this intervention study a process evaluation framework was applied covering aspects of the intervention and its implementation as well as the context and participants perceptions. The process evaluation revealed that the needs assessment phase was implemented successfully in school A, but not in school B where participation and readiness for change were insufficient. The results for school A and B diverged further in the phase of implementation of intervention activities: in school A several intervention activities were implemented, whereas this was hardly the case in school B. Regardless of actual participation and actual implementation of intervention activities, participants in both schools felt not involved in the choice of intervention activities. Furthermore, in both schools participants generally perceived the intervention's second phase negatively, for example because the intervention activities were not seen as the right solutions for the problems (school A). Three types of context factors further inhibited the implementation. That is, the schools had no capacity (school B) or only partial capacity (school A) to implement the intervention activities, foremost because middle managers were not fully equipped to do so. Secondly, the organizational culture in both schools was characterized by a lack of mutual trust between managers and teachers, which hindered implementation of this participatory intervention. Thirdly, several external events interfered with the planned intervention activities (e.g. a national change was announced by the Ministry of Education, implying an intensification of classroom-bound lessons from 850 to 1000 hours per year).

Based on chapters 4 and 5 it is concluded that further implementation of the intervention in its current form is not recommended. The general discussion (chapter 8) describes how the intervention could be changed in order to better fit the organizational context in schools.

How can we gather the most relevant evidence in intervention studies?

Designing evaluations of occupational health interventions can be challenging with regard to methodology (e.g. difficulties with randomization and control group), the intervention itself (e.g. the organization wants to adjust the inter-

vention protocol), and the context (e.g. new policy interferes with the intervention). The current intervention study also suffered from design challenges. For example, both schools wanted to participate in the study with a specific department, for which they believed the intervention would be most relevant. Although conceivable from the school perspective, this posed a methodological issue because randomization procedures were thereby obstructed. A controlled trial was conducted, making the effect evaluation prone to confounding and selection bias. As a consequence, baseline differences on several outcomes were present between the intervention and control group. The narrative review in **chapter 6** describes several of these challenges occupational health intervention researchers encountered and outlines research designs that solve (some of) them. In the review we furthermore explored alternative research designs for the situation wherein a regular Randomized Controlled Trial (RCT) is not feasible. One experimental alternative design (i.e. stepped wedge design) and several observational designs were found and discussed (i.e. propensity scores, instrumental variables, multiple baseline design, interrupted time series, difference-in-difference, and regression discontinuity).

Future primary preventive, participatory, organizational level interventions could benefit especially from the stepped wedge randomized design whereby the intervention is randomly applied to all groups but sequentially over time, or the multiple baseline design, which does the same although not randomly. Of course these designs pose their own challenges, such as the increased number of participants and measurement moments that are needed. In order to gather the most relevant evidence in intervention studies, researchers should consider beforehand the specific research question, the complexity of the intervention, the availability of existing data, the context, and the costs before choosing the most appropriate design.

Another issue in gathering the most relevant evidence based on intervention studies is related to the design of process evaluations. The field of process evaluation is rapidly developing and we noticed that many different theoretical frameworks exist, which include many overlapping process variables. In order to understand the most relevant evidence with regard to the implementation process, a systematic literature review of 44 process evaluations of organizational level stress management interventions was conducted (**chapter 7**). The review demonstrated that there is indeed great heterogeneity in methods and process variables studied: among the 44 evaluations, 47 different process variables were found. Also a theoretical framework or program theory, which could guide the choice of process variables, was missing in half of the articles. Furthermore, the process evaluation data were mostly collected after the intervention took place, instead of also before and during the intervention. We concluded that a standardized framework including variables with regard to the intervention, participants' mental models, and context factors would improve the theory development in the field of process evaluation for stress management interventions.

General discussion

In the general discussion (**chapter 8**) the main findings of this thesis are discussed from an individual, organizational, and intervention evaluation perspective. The organizational perspective is discussed in most detail. The expert-based approach evaluated in this part of the thesis is compared to the evidence-based approach. Several explanations are provided for the lack of positive effects. Firstly, I argue that employees' participation in the intervention was hindered by a phenomenon known as 'learned helplessness' (i.e. refraining to respond to (and thus influence) an event, while it could have been controlled by our own actions). Secondly, I describe that the intervention did not include a strategy to address employees' perceptions and appraisal. Thirdly, leadership and organizational culture did not enable the (implementation of the) intervention. Based on this discussion it is proposed that the degree of participation in interventions should be tailored to the context, whereby feasibility and suitability are leading principles. Furthermore, a more elaborate 'preparation phase' is proposed.

Next, several considerations with regard to methodology are discussed. Firstly, methodological difficulties due to the definition of work stress are provided, that is: (i) stress as the result of an imbalance between job demands and job resources; (ii) stress as a stage in a process rather than a definite outcome; and (iii) the measurement level of stress. It is proposed, respectively: (i) to actually calculate the imbalance in order to develop a more sensitive measure of work stress determinants instead of using proxies for stress or endpoints in the stress process, (ii) to develop a logic model of expected changes for an intervention study, distinguishing proximal, intermediate, and distal effectiveness outcomes; and (iii) to keep the measurement level of a group intervention and the measures the same by (at least) including constructs at the group level (e.g. aggregated sickness absence registration data, team level performance). Secondly, in the considerations paragraph of the general discussion it is discussed that an overlap exists between the definitions for organizational level intervention and for primary preventive intervention, which contributes to lack of clarity. Finally, it is described that in the current study a primary preventive intervention was applied, where secondary prevention would have been more appropriate.

The general discussion concludes with recommendations for practice and research. The main recommendation for practice is that a primary preventive, organizational level intervention is a change process that should be managed as such. This can be done by conducting a thorough preparation phase, to ensure commitment prior to the start, and to design participation in a manner that suits the organizational context. The main recommendation for research is to combine process and effect measures in future intervention studies, because this supposedly leads to a greater understanding of what works for whom under which circumstances.

Samenvatting

Goed onderwijs is de drijfveer van onze kennismaatschappij. Goed onderwijs kan excellent onderwijs worden als het niveau van doceren verbetert. Het niveau van doceren zal gemakkelijker verbeteren als een schoolorganisatie goed functioneert. Het verbeteren van het docerniveau wordt echter bemoeilijkt door de mate van stress waar docenten mee kampen. In geïndustrialiseerde landen is de onderwijssector (één van de) koploper(s) in de mate waarin werkstress ervaren wordt. Europese schattingen van het stressniveau van docenten zijn twee keer zo hoog als de stressniveaus in andere beroepen.

Werkstress leidt veelal tot verscheidene mentale en fysieke gezondheidsproblemen, maar ook tot negatieve organisatieuitkomsten (bijv. uitval uit werk) en verhoogde maatschappelijke kosten. Deze gevolgen zijn vooral alarmerend in het licht van een krimpende beroepsbevolking. Onderzoekers hebben gesteld dat sommige van deze gevolgen mogelijk voorkomen kunnen worden als adequate maatregelen worden getroffen. Echter, het wetenschappelijke bewijs voor de meest effectieve manieren om werkstress bij docenten te verminderen is niet sluitend. Om beter te begrijpen hoe we werkstress kunnen verminderen, is meer kennis over individuele en organisatorische determinanten van werkstress nodig voor specifieke beroepsgroepen waaronder medewerkers in het onderwijs. Ook zijn er nog methodologische problemen op te lossen, zoals het vaststellen van causaliteit bij de implementatie van interventies voor werknemersgezondheid. De doelstelling van dit proefschrift was het verkennen van manieren om werkstress bij docenten te verminderen en zo uiteindelijk bij te dragen aan excellent onderwijs (**hoofdstuk 1**). Drie kernvragen waren leidend in deze verkenning: (1) Hoe kunnen we werkstress bij docenten verminderen vanuit individueel perspectief? (2) Hoe kunnen we werkstress bij docenten verminderen vanuit organisatieperspectief? (3) Hoe kunnen we het meest relevante bewijs verzamelen in interventieonderzoek in de werkcontext?

Hoe kunnen we werkstress bij docenten verminderen vanuit individueel perspectief?

Het individuele perspectief werd verkend in een longitudinaal onderzoek met drie meetmomenten, onder 549 oudere docenten (45-64 jaar) (**hoofdstuk 2**). In dit onderzoek is de rol van *mastery* (nl.: gegeneraliseerd zelfvertrouwen, resulterend in de overtuiging dat men omstandigheden die van invloed zijn op het leven gewoonlijk wel aan kan) bestudeerd als een persoonlijke hulpbron om werkstress te verminderen. Pad-analyse is toegepast om de wisselwerking te verkennen tussen *mastery* enerzijds en taakeisen (nl.: psychologische taakeisen en emotionele taakeisen) en hulpbronnen anderzijds (nl.: autonomie en sociale steun), evenals hun invloed op werkgerelateerde stressuitkomsten (nl.: depressieve klachten en bevlogenheid).