Promoting sustainable employability of employees in low-skilled jobs

PROMOTING SUSTAINABLE EMPLOYABILITY OF EMPLOYEES IN LOW-SKILLED JOBS

Development, implementation, and evaluation of a dialogue-based intervention

Emmelie Hazelzet

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CHAPTER 1

General introduction

Emmelie Hazelzet

The current state of work and health in the Dutch context

Globally, the nature of work, workforces and workplaces is changing faster than ever.[1] Technological developments such as digitalization and robotization are causing a shift in work demands and require different skills and knowledge of employees. The ageing population leads to a different composition of the workforce, which challenges employees to prolong working lives and societies to ensure coverage of social security and pension systems.[2,3] Additionally, the intensity of work is changing in terms of pace and content. Compared to other Western countries, these changes are particularly intensive in the Netherlands.[3] The average duration of working life and the statutory Dutch retirement age (66.4 years) are among the highest in Europe.[4] The Dutch labor market is also the European leader in temporary and flexible contracts and precarious work, resulting in a high level of insecurity.[5,6] But while work demands are increasing, employees' overall control over work is decreasing, particularly for those with lower levels of education.[6,7]

The Netherlands has to cope with the contemporary challenges, which ultimately affect employees' quality of work and health (e.g., sickness and disability), organizations (e.g., loss of productivity), and society at large (e.g., elevated healthcare costs and expenditures on social security costs; economic decline).[6] Since the 1950s, health and work have been identified as fundamental basic human needs.[8] Both life domains are intertwined. In other words, health can affect work and work can also affect health. Regarding the latter, the 'broken bones' scenario was common in the past (e.g., poor physical work conditions leading to primarily physical health problems), while nowadays the 'broken brains' scenario is more prevalent (e.g., psychosocial risk factors leading to psychological health complaints).[6] In contrast, working under good conditions is associated with positive aspects, such as income, social relationships, personal identity, and meaningful social contribution.[9,10] These are all well-known aspects that contribute to a better overall well-being.[11]

One vulnerable group specifically affected by the current challenges and the rapidly changing labor market is the group of employees in low-skilled jobs, who have a lower socio-economic status and often lower educational levels. Although the overall educational level is increasing in the Netherlands, the majority (59%) of the working population is still categorized as lower educated (range: primary school to secondary vocational education (in Dutch: MBO-4)).[12,13] Low-skilled jobs are characterized by physically, manually, or administratively demanding work and low salaries. More vacancies are expected in these jobs and employers are challenged twofold: to take care of their employees to prevent disability and turnover, and to maintain a good image in the labor market to find enough employees in the shrinking labor supply.[14]

Health inequalities

1

Health inequalities refer to unfair differences in health status between different population groups within a society. Researchers and policymakers have made great efforts in reducing health inequalities in the past decades (e.g., public health-based programs), but the social gradient in health remains large and has even increased.[15-17] The so-called inequality paradox still exists[18,19]: the most advantageous or higher educated people benefit the most from the efforts, whereas the most disadvantaged or lower educated people hardly benefit. This contributes to widening the gap between both groups.[18,20] Lower educated people have a significantly higher risk of poor health, lower quality of life, lower life expectancy and premature mortality compared to higher educated people.[16,21] A mismatch occurs between health programs on the one hand and the health literacy, needs, circumstances, working and living conditions, and general level of skills and knowledge of people with lower levels of education on the other.[22,23] Different efforts to improve the health of lower educated people are thus necessary to reduce health inequalities.

Health inequalities at work

These health inequalities are also evident in the workplace. Lower educated employees have a significantly higher risk of absenteeism and early exit from the labor market due to health problems compared with their higher skilled colleagues.[24,25] Their jobs are generally characterized by poor working conditions, such as high physical demands, lack of job control, and perceived social supervisor support.[2,26] From a public health prevention perspective, workplaces are regarded as useful settings to reach a high number of people[27-29] because workers represent half of a country's population on average and spend a large part of their time at work. However, the inequality paradox may also exist in the workplace. Workplace interventions may potentially reduce health inequalities (i.e., when the benefits are larger for the disadvantaged groups)[19,30], but the evidence is inconclusive.[31,32] Higher educated employees participate and tend to benefit more from workplace health interventions than lower educated employees (those who need them the most).[19,33] Due to the mismatch, the participation level in these interventions and benefits from them are low among the vulnerable group of lower educated.[34] Workplace interventions are often developed without consulting the target group and implemented through a top-down approach. In this regard, employees are passive receivers of the interventions.[35]

To reduce the socioeconomic health gap and to improve above situation, there is an urgent need to develop and implement more effective approaches for lower educated employees. These new approaches need to be aligned sufficiently to the needs of the target group[17]; the employees should therefore have a voice in developing healthy workplaces in their organizations. This dissertation focuses on employees in low-skilled

jobs and contributes to improving the situation by focusing on improving their sustainable employability.

The role of the Dutch employer and sustainable employability

The Netherlands is well-known for employer involvement in employee health. Dutch employers have a legal responsibility (financially and caretaker) for their employees' health, sickness absence, and reintegration management in the workplace.[36] Historically, labor started to be considered a public health issue during the industrialization in Western countries in the 19th century. Governments began to consider work as a risk, following the introduction of legislation (e.g., working times and safety measures). Around the 1960s, the employee perspective became more important in the field of work and health. However, current labor market developments challenge this focus on the employee and thus also the employers. Due to their legal responsibility, employers are urged to invest in prevention to promote employees' health and sustainable employability (SE) to combat labor market problems. Employees have to cope with changes in this dynamic context and remain sustainably employable.

Despite the concept of employability being introduced in the Dutch labor system as early as the 1990s[37], the concept of SE has only been really embraced by employers, researchers, and policymakers in the last decade. This concept fits with the trend of emphasizing a more positive and preventive approach to occupational health management rather than a disability management approach.[38] It is increasingly acknowledged that SE and its related outcomes are beneficial for both employees and employers.[39] In this dissertation, we have chosen to use SE as a core concept. SE is about keeping employees healthy and productive and ensuring they perceive their work as valuable throughout their working lives. Even though a more precise definition of SE is still lacking, several attempts have been made by scholars to describe this dynamic and multidimensional concept better.[40-43] Other related concepts (e.g., vitality management; health promotion) are often used interchangeably with SE. This dissertation also aims to contribute to a better conceptualization and measurement of SE.

Employers and researchers currently face four difficulties in promoting SE in organizations:

1. Employer representatives (often Human Resource (HR) managers) acknowledge the importance of improving employees' health, but express difficulties to reach the specific group of employees in low-skilled jobs.
2. Due to a lack of knowledge, expertise, and tools, employers often rely on third parties, buying ready-made health interventions that are implemented via a top-down approach.[35] The intervention and living world of employees might thus not match and this often results in a lack of effect.

3. Often employers face SE as a dilemma: investing in SE pays off primarily in the long term, by which time employees might already have left the organization.[43] Additionally, a quick-fix mentality (i.e., focusing on short-term solutions) is common in the Netherlands[44], which makes it less attractive for an employer to invest in SE.
4. Finally, researchers are challenged to express the benefit of investing in the employees' SE at the workplace because of the limited evidence on the effectiveness of SE interventions. A valid instrument to measure the effectiveness of SE and capture the employee perspective – particularly of employees in low-skilled jobs - is not currently available. Such a measurement tool might be helpful to understand their perspective on SE and measure the effectiveness of interventions. Generally, a balance has to be found between the individual (i.e., improved employees' SE in the long run), the organization (i.e., the corporate vision of maximizing profit and cost reduction), and the public (i.e., health inequalities; the health and employment of the society at large).[45,46]

An organizational intervention with a humanistic focus

Despite the efforts made in the field of organizational intervention research to improve employees' health[47,48], employees in low-skilled jobs are still underrepresented in health-promoting activities and research[49], and there are still many challenges remaining[50]. To address the SE difficulties, the Intervention Mapping (IM) approach[51] was chosen as a method to develop a new intervention, using a specific perspective (humanistic focus). This comprehensive systematic approach is commonly used to develop and implement complex theory and evidence-based public health interventions. It is further characterized by a participative approach building on the involvement of multiple stakeholders. In this dissertation, a participatory development including a comprehensive needs assessment was carried out to listen and give voice to all involved stakeholders (from employees to management) in line with the humanistic focus. Moreover, an adapted version of IM was used as the leading principle within the intervention as it better suited the practical feasibility of work settings.

An organizational intervention was proposed for employers to support them in actively involving their employees in low-skilled jobs to develop and implement tailored SE interventions together. The intervention was based on the following sources of inspiration: humanism, (social) dialogue, active involvement and job control. These four sources cover the philosophy of the intervention.

The humanization of labor was originally introduced in the 1970s by taking the basic human needs in the workplace into account. In the Netherlands, this humanization focused on four aspects: good working conditions, good working relations, healthy job content and good conditions of employment.[52] Nowadays, due to the dynamic contemporary work settings and the strong focus on the day-to-day business, the

humanistic view tends to be neglected. This is particularly problematic in work settings with employees in low-skilled jobs that are characterized by high job demands and low job resources.[15,26] As health inequalities persist, employees in low-skilled jobs deserve more voice in the area of occupational health research.[26] Hence, a humanistic focus is included, aiming to highlight the needs and values of employees and to give them a true voice rather than solely aiming at the organization's continued existence and profit. We strive to contribute to reviving the 'human resource' aspect.[45,53,54]

Secondly, the social dialogue to set up joint actions between government, employers, and employees at the policy level inspired us. It includes negotiations, consultations, and information exchange between the three parties and has been successful in achieving better living and work conditions for vulnerable groups worldwide.[55] At the organizational level, social dialogue as a constructive conversation between employer and employees is not common, but a trend is becoming evident.[55] Engaging employees in dialogue is more valuable than one-sided monologues or directives from the top. In this dissertation, dialogue is regarded as an institutionalized method to promote a true conversation between employer and employees, in which all involved stakeholders have a shared responsibility for the outcome. The dialogue-based approach is increasingly used in the healthcare setting[56], but less commonly in the work setting. Through dialogue, employees gain an active voice and feel taken more seriously by their employer. They become an integral part of the organizational decision-making and are genuinely valued for that.[57] In particular, a shared decision-making component in an intervention might be beneficial for employees in low-skilled jobs.[58]

Thirdly, to actively involve employees from the start in continuous dialogues, employees' needs, knowledge, and wishes are taken into account. A fit between their ideas and the organizational context is created. This is expected to stimulate a feeling of ownership and trust, increasing the likelihood of success. Employees will be actively participating in the whole process, which is an effective intervention approach in the field of occupational health.[29,59-61]

Finally, through the active involvement and dialogue, employees' job control will be promoted. Job control (autonomy) refers to the employee's ability to influence their work environment and to make decisions about the job.[62] It is an important resource to improve the overall health and SE of employees in low-skilled jobs[62,63] and is relevant for reducing health inequalities in the work environment.[64]

Aims of this dissertation

The overall aim of this dissertation is to develop, implement, and evaluate the dialogue-based organizational intervention 'Healthy Human Resources' (HHR) aimed at promoting the SE of employees in low-skilled jobs. More specifically, the intervention research presented in this dissertation consisted of three parts: I) Review of the

evidence of existing SE interventions, II) the development of the intervention, and III) the implementation and evaluation of the intervention. Table 1.1 presents an overview of the three parts with their corresponding objectives, chapters, and study populations (if applicable).

Table 1.1 Overview parts, aims, chapters, and populations.

Parts	Objectives	Chapter	Population*
Review of the evidence of SE interventions	To describe the concept of SE	2	N/A
	To examine the evidence and content of existing interventions in the field of SE		
Development	To develop the organizational intervention HHR	3	1
	To develop and validate a SE measurement tool tailored to employees in low-skilled jobs	4	1
Implementation and evaluation	To implement and evaluate HHR	5 and 6	1
		7	2

Note. *Population 1: five Dutch work organizations; Population 2: two Dutch work organizations.

Design and study population

The lessons learned from the review in part I (chapter 2) gave us insights for the development of HHR. The research described in parts II and III is based on two study populations (see Table 1.1). The *population 1* consisted of five Dutch work organizations involved in *developing* the intervention (chapter 3). Cross-sectional data were collected from the first population and formed the basis for the questionnaire validation study (chapter 4). The study protocol in chapter 5 and the qualitative study in chapter 6 are also derived from population 1. Based on the lessons learned from the first population, we approached a *population 2*, which consisted of two Dutch work organizations. The study in chapter 7 is based on this population 2 and used a longitudinal dataset.

In comparison with other studies in the field of occupational health, this dissertation includes a large amount of process evaluation data about the implementation of the intervention (both qualitative and quantitative) which was collected throughout the whole intervention process (development, implementation, evaluation) from multiple stakeholders. Such a mixed-method approach has proven to be methodologically challenging, but highly valuable and is advocated in previous research on organizational interventions.[59,65]

Outline of this dissertation

Chapter 2 presents a systematic literature review of the effectiveness of interventions to promote the SE of employees, including a critical examination of the concept of SE.

Chapter 3 presents the development process and content of the HHR intervention for employers aimed at improving the SE of employees in low-skilled jobs in five Dutch work organizations (population 1). The first four steps of the IM approach were used. [51] The intervention is based on the knowledge obtained from the systematic literature review and semi-structured interviews with employees and employer representatives and theoretical assumptions.

Chapter 4 describes the development and validation of the adapted MAastricht Instrument of Sustainable Employability (MAISE-Easy), a questionnaire to measure SE among employees in low-skilled jobs. This is an adjusted version of the MAISE-NL[66] and builds on the insights from the literature review on SE (chapter 2) and the focus groups with the target population (chapter 3). The questionnaire is used as a measurement tool within HHR to map the specific problems from an employee perspective that HHR should target and to evaluate the effectiveness of HHR.

Chapter 5 presents the study protocol, showing how we planned to evaluate the effectiveness and implementation process of HHR in improving employees' SE. The evaluation consisted of an effect evaluation and a mixed-method process evaluation, including different stakeholders' perspectives.

Chapter 6 presents a qualitative study to understand the adoption and implementation of the HHR intervention in population 1, which was also involved in the development of HHR.

Chapter 7 presents the results of the effect and process evaluation of HHR in two Dutch work organizations (population 2) following the study protocol presented in chapter 5 and building on the lessons learned from the first population.

Chapter 8 provides the general discussion of this dissertation. A summary and a reflection of the study's main findings, methodological considerations, and our vision on recommendations for future research and practice are described.

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CHAPTER 2

Effectiveness of interventions to promote sustainable employability: a systematic review

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Int J Environ Res Public Health 2019;16(11):1985

Abstract

Background

Despite growing interest in sustainable employability (SE), studies on the effectiveness of interventions aimed at employees' SE are scarce. In this review, SE is defined by four core components: health, productivity, valuable work, and long-term perspective. The aim of this review is to summarize the effectiveness of employer-initiated SE interventions and to analyze whether their content and outcome measures addressed these SE components.

Methods

A systematic search was performed in six databases for the period January 1997 to June 2018. The methodological quality of each included study was assessed. A customized form was used to extract data and categorize interventions according to SE components.

Results

The initial search identified 596 articles and 7 studies were included. Methodological quality ranged from moderate to weak. All interventions addressed the components 'health' and 'valuable work'. Positive effects were found for 'valuable work' outcomes.

Conclusion

The quality of evidence was moderate to weak. The 'valuable work' component appeared essential for the effectiveness of SE interventions. Higher-quality evaluation studies are needed, as are interventions that effectively integrate all SE core components in their content.

Introduction

Maintaining employees' sustainable employability is important for employers and employees. The labor force is aging, and current work environments are challenged by the need for flexibility, widespread digitalization, and for building sustainable organizations.[1,2] Employers are searching for different ways to stimulate employee health in a sustainable way and to build organizations consisting of vital workers.[2] A definition of sustainable employability (abbreviated SE) has been proposed by Van der Klink and colleagues[3,4]:"Sustainable employability means that, throughout their working lives, workers can achieve tangible opportunities in the form of a set of capabilities. They also enjoy the necessary conditions that allow them to make a valuable contribution through their work, now and in the future, while safeguarding their health and welfare. This requires, on the one hand, a work context that facilitates this for them and on the other, the attitude and motivation to exploit these opportunities"[4] (p.4).

SE interventions should thus address at least four core components: a health component (e.g., well-being, vitality, and quality of working life), a productivity component (e.g., work ability, productivity, work engagement, and work performance), a valuable work component (e.g., positive attitude, job motivation, and having the right competences for one's work), and, considering the long-term goal of SE, a long-term perspective component (e.g., future employability of employees of all ages and long-term effects). The 'valuable work' component is derived from the capability approach of Sen.[4,5] This value-driven approach highlights what is valuable for and valued by people and how these values can be achieved in someone's life. It is not only what an individual, in this case an employee, actually does. It also concerns what an individual can do or is able to do.[5,6] It is a shared responsibility of the employee and the work context to build up and facilitate these capabilities. These are the opportunities to achieve and enable a valuable (working) life.[6]

Despite a growing interest in SE, studies on the effectiveness of SE interventions to promote SE are scarce. Workplace health promotion interventions (WHPIs) have more often been developed and evaluated, but these mainly focus on lifestyle, health, and short-term effects.[7,8] Ideally, SE interventions should include all core components of SE and thus also focus on long-term effects, as this is inherent to SE.[3,9] The effectiveness of SE interventions is less often studied. A recent review by Oakman and colleagues[10] showed that moderate-quality evidence is available for the effectiveness of interventions aimed at improving employee work ability (which can be considered a proxy of SE). A small but significant and positive effect was found, but the authors concluded that further high-quality research is needed.[10] Another review by Cloostermans[11] showed that, among aging employees, there is insufficient evidence for the effectiveness of SE interventions. What might also be lacking is a focus on SE for

employees of all work ages. Prevention of diseases, having a focus on lifetime employability, and a personal career development should start at an early age.[12,13]

In the current study, we aim to review the evidence on the effectiveness of employer-initiated SE interventions. This includes the analysis of the interventions' content and the outcome measures used to evaluate their effectiveness. To what extent the four SE core components are covered in both the intervention content and in the outcome measures is specifically assessed. Each study's methodological quality is evaluated by a multi-design quality assessment tool.

Materials and methods

Search strategy and study selection

Six electronic databases were searched (Cinahl (Ebsco), EconLit (Ebsco), Embase, PsycInfo (Ebsco), Pubmed, and Web of Science). The search was limited to full-text scientific articles published between January 1997 and June 2018. This time period appears to be sufficiently broad as attention for and research into SE research is relatively recent. The following keywords were used: 'sustainable employability' OR 'sustained employability' OR 'sustainable employment' OR 'sustained employment' OR 'sustainable work' OR 'sustained work'. We searched for studies covering these terms in the title, abstract, or text body. When we added the keywords 'evaluation' or 'intervention' to the search (with the search command AND), we did not find enough relevant articles. We included only studies which quantitatively evaluated the effectiveness of employer-initiated SE interventions among currently active employees (whether temporarily on sick leave or not). Therefore, we did not include qualitative studies or process evaluations, although the latter were used to describe the context of the studies and interpret the absence or presence of effectiveness. Generally, to optimize the sensitivity of our search, we ensured—also in the manual selection—that our search strategy and selection was broad. Based on a screening of titles and abstracts, the initial selection of studies was done independently by the first two authors. When decisions about inclusion differed between the two authors, they met to achieve consensus about study inclusion. In case of persisting disagreement, consensus was achieved in discussion meetings with all authors, using the full text articles.

Methodological quality assessment

The methodological quality of the included studies was assessed by means of the Quality Assessment Tool for Quantitative Studies developed by the Effective Public Health Practice Project (EPHPP).[14-16] This tool allows the assessment of the methodological quality of both randomized and non-randomized studies. It is suitable

for use in a systematic literature review and has previously been used in other studies.[15,16] The tool consists of six criteria: selection bias at baseline, study design, confounders, blinding, data collection methods, and withdrawals and dropouts. Every criterion was assessed as "strong", "moderate", or "weak". The appropriateness of the statistical analyses was assessed separately: "yes" or "no". As per the EPHPP protocol, the overall quality rating was determined by assessing all criteria ratings, except the data analysis. A study with at least four strong ratings and no weak ratings was assessed as "strong"; a study with less than four strong ratings and one weak rating was assessed as "moderate"; and a study with two or more weak ratings was assessed as "weak". Two first two authors independently rated the studies. The results were compared and differences were discussed during a consensus meeting. The three last authors additionally assessed three, two, and two articles, respectively, and their results were compared to those of the two first two authors. In order to reach consensus, differences were discussed with all authors. Hence, all studies were assessed by three reviewers.

Data extraction

Using a customized form, the first author extracted the data from the studies. The form included the following captions: target population (N and sub-populations), follow-up period, the content of the interventions, the outcome measures that were used, and the effectiveness of the interventions. We categorized each study according to which of the four SE core components were covered in the content of the intervention and in the set of outcome variables used to evaluate the effectiveness. Table 2.1 shows an operationalization of the four SE core components.

Table 2.1 Operationalization of sustainable employability (SE) core components in intervention content and outcome measures.

SE core component	Intervention content	Outcome measures
Health	Intervention focuses on health aspects, such as well-being, quality of working life, vitality, lifestyle, or mental and physical health.	E.g.,, well-being, quality of working life, vitality, lifestyle, or mental and physical health.
Productivity	Intervention focuses on productivity aspects, such as work ability, productivity, or work engagement.	E.g.,, work ability, productivity, or work engagement.
Valuable work	Intervention focuses on valuable work aspects, such as perceived positive attitude, job motivation, having the right competences to perform the job, and development of skills and knowledge.	E.g.,, perceived positive attitude, job motivation, having the right competences to perform the job, and development of skills and knowledge.
Long-term perspective	Intervention focuses on all work ages. Intervention explicitly aimed at long-term effects.	Use of a follow-up period (at least 1 year) with repeated measures not only assessing short-term effects.

Results

Selection of articles

A total of 596 records were retrieved. After removing 224 duplicates, 372 unique references remained. Based on title and abstract, 25 articles were selected for potential inclusion (Figure 2.1). Of these 25 articles, 18 were excluded because they did not report an intervention (7 articles), the intervention was not a SE intervention (3 articles), the intervention was not evaluated on effectiveness (5 articles), the population did not meet our inclusion criteria (2 articles), or the articles were not scientific articles (1 article). In total, seven articles were included in this review. We also screened the reference lists of these seven articles. This search did not result in additional articles. See Figure 2.1 for the Systematic Reviews and Meta-Analysis (PRISMA) flow diagram.

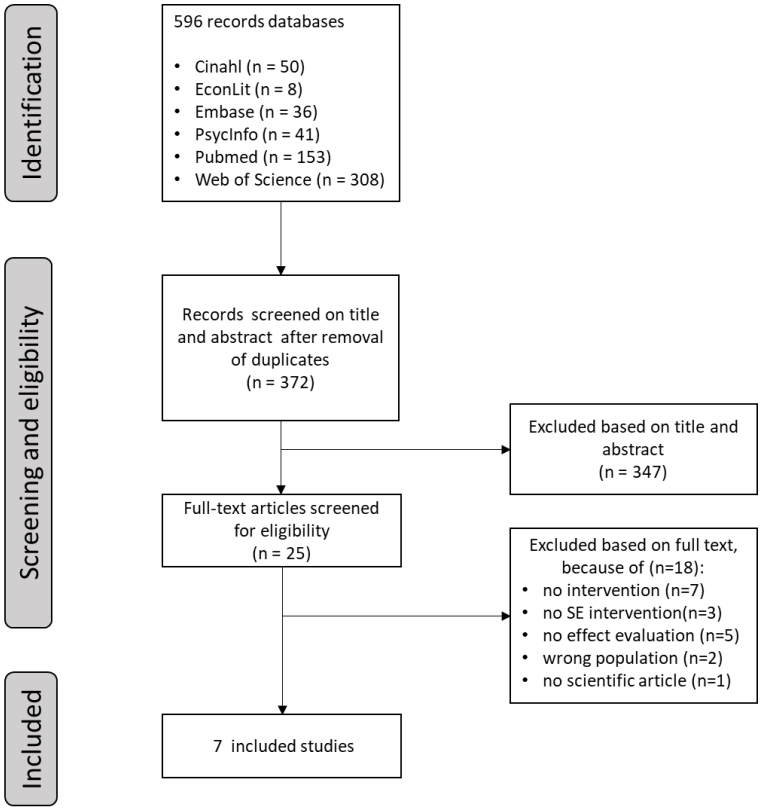

Figure 2.1 Selection of studies: Systematic Reviews and Meta-Analysis (PRISMA) flowchart.

Methodological quality of the studies

In general, the overall methodological quality of the seven studies ranged from moderate to weak (Table 2.2). Three out of seven studies[17-19] had a moderate overall methodological quality. One study scored "strong" four times on the criteria.[18] However, blinding of participants and researchers was not possible in any of the studies. This was rated as weak which at best leads to an overall moderate study quality. Four studies[20-23] had a weak overall methodological quality which was mainly due to selection bias, no blinding of participants or outcome assessors, and a low follow-up rate. One of these four studies was very weak, scoring low on five out of six criteria.[23] This was due to the lack of a description of the tool properties, confounders, dropout rates, and data analysis techniques. The remaining six studies used appropriate data analysis techniques. Upon request, more information about the rating of each criterion is available from the authors.

Table 2.2 Methodological quality of the studies included.

Study	Selection bias (baseline)	Study design	Confounders [b]	Blinding	Data collection	Withdrawals and dropout	Data analysis	Overall quality [c]
Oude Hengel [a 17]	Strong	Strong	Strong	Weak	Moderate	Moderate	Yes	Moderate
Oude Hengel [a 18]	Strong	Strong	Strong	Weak	Strong	Moderate	Yes	Moderate
Koolhaas[19]	Moderate	Moderate	Strong	Weak	Strong	Moderate	Yes	Moderate
Van Holland[20]	Weak	Moderate	Strong	Weak	Strong	Weak	Yes	Weak
Van der Meer[21]	Weak	Moderate	Strong	Moderate	Moderate	Weak	Yes	Weak
Van Scheppingen[22]	Weak	Moderate	Strong	Weak	Strong	Weak	Yes	Weak
Weiss[23]	Weak	Moderate	Weak	Weak	Weak	Weak	No	Weak

[a] Same intervention, but different outcome measures; [b] Were demographics and pre-intervention outcome scores taken into account as confounders?; [c] Overall quality: Strong (4 strong and no weak ratings); Moderate (<4 strong ratings and one weak rating); Weak (two or more weak ratings).

Data extraction

Table 2.3 provides an overview of the general characteristics of the interventions, their content, the outcome measures of the evaluation, and the interventions' effectiveness.

Content and effectiveness of SE interventions

The interventions varied and included both individual and workplace interventions. To support SE of employees in the construction sector, Oude Hengel et al.[17,18] evaluated a worksite prevention program to improve work ability and health-related quality of life. The intervention consisted of three components: two physical components and one mental component. The employee received two individual training sessions with a physical therapist to lower the employee's physical workload and the sessions included a

quick scan and a job observation at the workplace. Afterwards, advice was given to the employee. In the second training, the experiences of the employees were discussed. The second physical component was a rest break tool to improve the employee's ability to balance between work and recovery. The mental intervention component consisted of two empowerment group training sessions to increase the employee's influence at the worksite.[17,18] In the first training session, employees wrote down a list of topics that they thought were amenable to change and they agreed on an action plan. In the second training, the action plan was evaluated. Overall, this intervention showed no effect on work ability, health, work engagement, social support, and need for recovery. A negative effect was found for the physical workload after 6 months of follow-up.

The study of Koolhaas et al.[19] evaluated a problem-solving based intervention focused on enhancing the capacity and awareness towards SE of aging employees. First, an inventory of work-related problems and a needs assessment was performed. Afterwards, a dialogue between the employee and the supervisor was performed to discuss solutions followed by an action plan. For the preparation of the dialogue and development of the action plan, a booklet was provided to the employees. The supervisors were trained to challenge the workers to reflect on the feasibility of solutions. Furthermore, knowledge on SE and problem-solving techniques were discussed with the supervisors. The problem-solving based intervention showed a positive effect on the secondary outcome measures of perceived work attitude, skill discretion, and self-efficacy, whereas no effect was found on the primary outcome of productivity and a negative effect was found for work ability and vitality.[19]

Van Holland et al.[20] evaluated an intervention program to identify employees who are at risk for reduced SE. The program consisted of different screening tests, such as a digital questionnaire on work ability, health and lifestyle, and physical measurements, such as biometric and functional capacity measures. In a counselling session with a vocational physiotherapist, the results of the screening tests were discussed with the employee and, when necessary, the employee received advice on whether or not to take consecutive actions. The intervention program showed negative effects on sickness absence and productivity, whereas a small positive effect was shown on the psychosocial outcome meaning of work, a measurement component of psychosocial workload.[20]

A longitudinal study by Van der Meer and colleagues[21] evaluated the impact of SE company policies on work engagement and word ability of aging employees. These policies were especially designed for aging employees to support their SE. Employees received an online questionnaire about different topics, such as health and productivity. Furthermore, employees were asked whether the two SE company policies for aging employees: 1) "reduced number of working hours per week" and 2) "exemption from evening or night work", were available and used in their company.

The SE company policy “exemption from evening or night work” resulted in a structural change and a higher work engagement after one year. However, the SE policy “reduced number of working hours per week” showed a negative effect on work ability among older employees.[21]

The study of Van Scheppingen et al.[22] evaluated a large-scale intervention to induce a health- promoting organizational change process in a population of employees in a dairy company. The intervention consisted of three main components: 1) dialogue sessions aimed at reflecting on the value of health and vitality at work among employees and at putting this on the personal agenda of employees and the organization, 2) vitality-promoting activities at the department level, such as lunch walks or workshops on healthy work postures, and 3) physical activities in which employees could participate individually, such as running races and team sports activities. The different intervention components showed positive effects on the outcomes openness toward health, smoking, healthy eating, bonding social capital, and perceived sustainable employability.[22]

Lastly, using an online questionnaire filled out by employees, a longitudinal study by Weiss[23] evaluated the progress of companies regarding health, safety, sustainability, and stewardship. Monthly best practice exchange meetings between companies were organized to promote collective efficacy by sharing ideas about the four areas. This study shows that a collective efficacy approach seems to improve the health and sustainable work culture and to increase employee attachment to the organization.[23]

Table 2.3 Description of interventions, outcome measures and effectiveness.

Study	Study population	Follow-up	Intervention content	*SE core components in content*	Outcome measures	*SE core components in outcome measures*	Effectiveness[b]
Oude Hengel[a17] Moderate overall quality	Construction workers (N=293) Mean age=41.8 years intervention group and 44.2 years control group Education level: Intervention group: Low (74%); Medium-high (26%). Control group: Low (84%); Medium-high (15%).	3,6,12 months	Two individual training sessions with a physical therapist to lower physical workload[c] *Training 1* Health risk assessment (quick observation scan) Individual advice and max. 3 recommendations Training 2 after 4 months Discuss experience and impact of former advice. A rest-break tool on fatigue and need for recovery. Four steps: Workers' own expectations about their fatigue Short-term advice to take mini-rest breaks Selection of possible causes of fatigue Long-term advice about structurally lowering fatigue. Two empowerment training sessions to increase worker's influence at the worksite. Five steps: Introduction of self-efficacy. Introduction of the training. Explanation of how to change passive attitude to pro-active and positive attitude. List of topics workers would like to change during the intervention Action plan	*Health* *Health* *Long-term perspective* *Valuable work*	Physical workload Need for recovery Work engagement Social support at work	*Health* *Health* *Productivity* *Valuable work*	**Negative effect** (in intervention group 6 months of follow-up) No effect No effect No effect

Table 2.3 (continued)

Study	Study population	Follow-up	Intervention content	*SE core components in content*	Outcome measures	*SE core components in outcome measures*	Effectiveness[b]
Oude Hengel[a] [18] Moderate overall quality	Construction workers (*N* = 293) Mean age = 41.8 years intervention group and 44.2 years control group Education level: Intervention group: Low (74%); Medium-high (26%). Control group: Low (84%); Medium-high (15%).	3,6,12 months	Two individual training sessions with a physical therapist to lower physical workload [d] A rest-break tool on fatigue and need for recovery [d] Two empowerment training sessions to increase worker's influence at the work site [d]	*Health* *Health* *Long-term perspective* *Valuable work*	Sick leave Musculoskeletal symptoms Mental and physical health status Work ability	*Health* *Health* *Health* *Productivity*	No effect No effect No effect No effect
Koolhaas[19] Moderate overall quality	Aging workers (Age >45 years) (*N* = 125) Education level: Low (17%) Medium (40%) High (43%)	1 year	Inventory of work-related problems, needs and career and personal development opportunities of the worker. Dialogue between worker and supervisor to discuss solutions; Supervisors were trained in challenging the workers to reflect on the feasibility of solutions. Making an action plan to plan and implement solutions for a follow-up period next year.	*Health* *Valuable work* *Valuable work* *Long term perspective*	Perceived fatigue Vitality Work ability Productivity Work engagement Job content (skills discretion) Perceived work attitude Self-efficacy	*Health* *Health* *Productivity* *Productivity* *Productivity* *Valuable work* *Valuable work* *Valuable work*	No effect **Negative effect** **Negative effect** No effect No effect **Positive effect** **Positive effect** **Positive effect**

Table 2.3 (continued)

Study	Study population	Follow-up	Intervention content	*SE core components in content*	Outcome measures	*SE core components in outcome measures*	Effectiveness[b]
Van Holland[20]	Workers of Dutch meat processing company (*N* = 305) mean age = 50.6 years Education level: No-low (64%); Medium-high (32%)	3 years	Risk assessment tests to create the risk profile of the employee, such as: Tests on physical and mental health (biometric measures) Tests on physical and mental work capacity (functional capacity) Assessment on work ability, health and lifestyle. Counselling session. The employee receives feedback on his/her results from the screening tests by a consultant and advice on whether or not to take consecutive actions.	*Health* *Productivity* *Valuable work*	Sickness absence Health Vitality Work ability Productivity Psychosocial variable: meaning of work	*Health* *Health* *Health* *Productivity* *Productivity* *Valuable work*	**Negative effect** No effect No effect Negative effect **Negative effect** **Positive effect**
Van der Meer[21] Weak overall quality	Workers, including self-employed and people without paid job (45–64 years) (*N* = 6922) Mean age = 53.7 years	2 years	Create awareness and knowledge of aging employees on the availability and the use of two company policies to support: 'reduced working hours per week for older workers' 'exemption from evening or night work for older workers'.	*Health* *Valuable work* *Productivity*	Work engagement Work ability	*Productivity* *Productivity*	**Positive effect** (by starting to use the policy 'exemption from evening/night work') **Negative effect** (by starting to use the policy 'reduced working hours')

Table 2.3 (continued)

Study	Study population	Follow-up	Intervention content	*SE core components in content*	Outcome measures	*SE core components in outcome measures*	Effectiveness[b]
Van Scheppingen [22] Weak overall quality	Workers in Dutch dairy company (*N* = 324) Age: <30 = 14.8% 30–45 = 37.3% >45 = 47.8% Educational level: Primary = 22.2% Secondary = 42.0% Higher = 35.8%	18 months	Dialogue and reflective thinking on the value of health and vitality at work; Collective vitality-promoting activities at department level; Physical activities organized at organizational level (participation on an individual basis).	*Health* *Valuable work* *Health* *Health*	An improvement of employees' lifestyle: Physical activity Smoking Alcohol use Healthy eating Relaxation Health and vitality at work: Perceived health Emotional exhaustion Vitality at work Sustainable employability Autonomous motivation toward a healthy lifestyle Bonding social capital Openness toward health and vitality at work	*Health* *Health* *Long-term perspective* *Valuable work* *Valuable work* *Valuable work*	**Positive effect** (smoking and healthy eating; component 1) **Positive effect** (healthy eating; component 2) **Positive effect** (sustainable employability; component 1) **Positive effect** (component 3) **Positive effect** (component 1) **Positive effect** (component 1) **Positive effect** (component 3)
Weiss[23] Weak overall quality	Several companies with 100 or more employees No further information on demographics	4 years	The Attach21 survey tool to indicate the status quo situation on four areas: health, safety, sustainability and stewardship. Monthly best practice exchange between companies to promote collective efficacy by sharing ideas about health, safety and sustainability best practices.	*Health* *Valuable work* *Health* *Valuable work*	Six core components: Consistency Stability Confidence Trust (self-efficacy) Dedication Attachment	*Valuable work* *Long-term perspective*	No effect: high level of self-efficacy No effect: High levels of attachment

[a] Same intervention, but different outcome measures; [b] Bold means statistically significant. No statistically significant results are listed as no effect; [c] Information obtained in other design paper. [d] Same intervention content in article Oude Hengel 2012.

Content and effectiveness of SE interventions in the light of the four SE core components

This section describes patterns in the effectiveness of the SE interventions, taking into account the methodological quality of the studies and the extent to which the four SE core components are covered in both the intervention content and the outcome measures.

In the three studies of moderate quality (2 interventions), both interventions included the following three SE components: 'health', 'valuable work', and 'long-term perspective'. All four components were measured as outcomes. Two studies showed significant negative effects on the 'health' outcomes (1 of 2 measures and 1 of 2 measures, respectively).[17,19] One study showed a significant negative effect on the 'productivity' outcomes (1 of 3 measures).[19] The latter study showed positive significant effects for all measures of 'valuable work' outcomes, though.[19] All three studies used a follow-up period of one year with repeated measurement points.

Of the four weak studies (4 interventions), all interventions included the 'health' and 'valuable work' component[20-23] and two interventions included the 'productivity' component along with the 'health' and 'valuable work' component.[20,21] The 'long-term perspective' component was covered in one intervention, as the intervention included all working ages.[22] Overall, all four SE components were measured. In the weak studies, one study showed a significant positive effect on 'health' outcomes (2 of 2 measures), 'valuable work' outcomes (3 of 3 measures), and 'long-term perspective' outcome (1 of 1 measure).[22] It also reported how specific intervention ingredients were related to effectiveness.[22] One study showed a significant negative effect on 'health' outcomes (1 of 3 measures) and on 'productivity' outcomes (1 of 2 measures), while a small significant positive effect was shown on the 'valuable work' outcome (1 of 1 measure).[20] One study showed a significant positive effect as well as a negative effect on the two 'productivity' outcomes.[21]

The content of all interventions addressed the components 'health' and 'valuable work'. Regarding 'long-term perspective', two interventions included employees of all work ages, and three interventions included employees of 45 years and older. Positive effects were found for 'valuable work' outcomes and, to a lesser extent, for 'health' outcomes and 'productivity' outcomes. Also negative effects were shown for 'health' and 'productivity' outcomes. Regarding the 'productivity' outcomes, the chosen outcome measures were not always in line with the intervention content. More precisely, the 'productivity' component was absent in the majority of interventions (4 interventions). The studies that included three SE core components in the content of the SE interventions led to fewer effective outcomes (not even with a longer follow-up period) compared to the studies that included only two SE core components.

Discussion

This literature review systematically summarizes available evidence regarding the effectiveness of employer-initiated SE interventions. First, we analyzed the content and effectiveness of the SE interventions. Second, we analyzed the extent to which these interventions covered the four SE core components in their content, and whether these components were addressed in the outcome measures used to evaluate effectiveness. A relatively low number of studies are available that evaluated SE interventions and our findings indicate a moderate to weak quality of evidence on the overall effectiveness of SE interventions. Mixed effects were found, in which the majority of the studies showed negative or no effects on 'health' and 'productivity' outcomes. A minority showed significant positive effects, which were mainly interventions having a 'valuable work' component in their content and outcome measures. The limited effectiveness is in line with earlier research (in aging employees[12]). There might be several causes for the limited effectiveness, related to the content of the SE interventions, program failure, and choice and operationalization of outcome measures.

Firstly, based on the definition of SE by Van der Klink and colleagues, we distinguished four SE core components (i.e., health, productivity, valuable work, and long-term perspective). At least two SE core components, 'health' and 'valuable work', were addressed in the content of all interventions. Regarding the effectiveness and potentially effective ingredients of the moderate-quality studies, the study of Koolhaas et al.[19] for instance showed positive effects on 'valuable work' outcomes, which might be due to 'valuable work' components in the intervention content. Specifically, the first two intervention ingredients, the inventory of problems and the dialogue between employee-supervisor, might have been be potentially effective ingredients, as—in terms of awareness and own responsibility for SE—the intervention changed the employees' perspective positively. However, the study showed negative effects on 'health' as well. In general, the negative effects of an intervention might be explained by a response shift of the employees who, as extra attention is being paid to health, become more aware and responsible for their health and related problems. Another reason for the negative effects on 'health' might be due to the short follow-up.[24] To assess the full effect on health, long-term studies (e.g., decades) would be needed. Regarding the study of Oude Hengel et al.[17,18], a reason for the lack of effect of the intervention may be due to a healthy worker effect, as the health and work ability of the employees at baseline were considered good.[18] The weak studies showed positive effects on 'valuable work' outcomes as well, and one study revealed which specific intervention ingredient contributed to which positive effect. Valuable work components, such as the dialogue and reflective thinking sessions, appeared effective ingredients in this intervention study.[22] In line with the value-driven approach of Sen, 'valuable work' appears to be addressed effectively in three intervention studies. It seems that SE interventions including 'valuable work' enable a valuable work life and are as such appreciated by

employees. All 'valuable work' outcomes are related to the individual level. However, it might well be that the work context rather than the individual facilitated these outcomes via the 'valuable work' component in the intervention. It is important to include a 'valuable work' component in SE interventions.

Van Holland et al.[20] reflected on the negative effects of their intervention on 'health' and 'productivity'. The negative effect on 'health' outcomes (sickness absence) might be explained by the investments (aimed at reducing sickness absence) that the participating company already did prior to the intervention. There might not have been room for additional improvement. In the study evaluating SE company policies[21], both a positive and a negative effect were found on the 'productivity' outcomes. One policy decreased the work ability in older employees. The authors speculated that this might be due to the fact that the policy was not tailored to the needs of these employees. It might also be that employees who started to work less hours, felt less productive as a result. In addition, the authors reported that aging employees who were eligible for the policy may have perceived feelings of being "superfluous". The SE policy "exemption from evening/night work" showed a positive effect on work engagement. This is may be due to employees feeling more energized after quitting evening/night shifts.[21]

Secondly, process evaluations may provide more insight into the facilitators and barriers in SE interventions or difficulties in the implementation process.[25,26] We considered whether authors performed such process evaluations and/or otherwise provided explanations in their reports for the lack of effectiveness. In our review, four out of seven studies[17-20] included a process evaluation, and the authors mentioned a variety of possible program failures, such as a poor implementation of a specific intervention content, low compliance, or whether the intervention is delivered as intended.[17,20] The influence of contextual factors appears to play a role as well, for example in the intervention of Oude Hengel et al.[17,18], where an economic recession negatively influenced the dose received of the study. However, a smaller company size or higher management engagement led to higher attendance rates.[27] The ineffectiveness in the study of Van Holland may be explained by a poor follow-up of recommendations of the participants.[20,28] Negative effects on vitality and work ability as primary outcomes were explained by a low adherence of the workers in the last step of the intervention.[19] Additionally, dose-delivered issues occurred, such as a training duration which was too short and the level of skills and knowledge of supervisors, which might have been inadequate.[19]

Finally, the limited effectiveness of interventions might also be explained by the fact that the choice and operationalization of outcome measures did not align with the intervention content. This is particularly salient for the 'productivity' component which often is absent in intervention content and outcome measure.

Study strengths and limitations

One methodological strength is the systematic search of the literature. In this review, not only RCTs but also alternative study designs such as a quasi-experimental or cohort studies were included.[10,26,29] Although a RCT is the golden standard to determine intervention effectiveness, in the field of organizational work site interventions, it could act as a limiting factor, and alternative designs often deployed as randomization, controlling, and blinding are often difficult or even impossible. When using the EPHPP, the highest methodological quality that can be achieved in this field of research is moderate as a consequence. This should be taken into account when judging our evaluation of the quality of the studies included. Without the blinding criterion, one study would have scored a strong overall quality.[18]

Furthermore, the number of SE interventions and evaluation studies is still very low. We could only include seven studies that matched our inclusion criteria. Our search might have been too narrow or the manual selection could have limited the number of hits unnecessarily. During the manual selection, studies outside the research field showed up (e.g., studies focused on sustainability in terms of improvement of the planet/environment). Therefore, we explicitly focused on the combination of the terms sustainability/sustainable and work/employment in the selection of the papers. Furthermore, as we were also interested in the SE intervention content and whether that showed any relation to effectiveness, we rather broadly and thus sensitively included all interventions that were explicitly framed as SE and focused on the level of employees. As we did not focus just on employees in a specific target population in a sector or an age group, we further increased this sensitivity. The disadvantage of this broad selection with still few hits is that the SE interventions are diverse, which complicates the detection of patterns of effectiveness. Although we were explicit about how we registered the SE core components in both intervention content and outcome measures, we acknowledge that the reliability and validity can still be questioned. The systematic manner in which we addressed the four suggested SE core components, both in intervention content and in the outcome, and in which we also assessed the link between intervention and outcome measures for potentially effective ingredients, is a clear strength of this study. This is the first study applying this method systematically, as far as we know. Moreover, this is the first time that the definition of SE was further operationalized into four SE core components in relation to SE interventions. This way of operationalization seems to be most in line with the SE definition of Van der Klink.[6] There is no consensus yet among scholars on how to operationalize SE though.

Furthermore, no distinction could be made between subgroups (i.e., educational level). Therefore, it is not possible to make statements about the differential effectiveness in specific subgroups, which could have been relevant as specific SE interventions or ingredients might be more effective for specific subgroups.

Finally, most of the included intervention studies were conducted in the Netherlands. One explanation might be that the concept of 'employability' was introduced in the public debate already in the 1990s in the Netherlands.[30] At that time, employees were thought to invest in their own employability during their whole working career, due to societal and legislative developments and a government withdrawing from labor-related issue.[30] Further, employers in the Netherlands traditionally have a large responsibility for the health and age management in the workplace. In the last decade, the concept of SE has been embraced by employers because of these developments as a solution for working population becoming older and—if not prevented—less productive. Research has followed these interests.

Recommendations for future research and practical implications

This review has several implications for future research and practice. It appears to be difficult to perform high-quality research in this field. Researchers should pay attention to designing studies with the highest quality possible, given the circumstances. Designing a RCT might not be possible, but other methodological criteria should be met as good as possible. For example, participation rates should be as high as possible, to minimize the selection bias. A high follow-up rate is important as well. However, organizational changes in a work setting could affect the follow-up rate and the potential effectiveness of the intervention.[31] As blinding is difficult in a workplace setting, researchers could minimize the problems related to this by providing no information about the main research question to the study population. Furthermore, this review focused especially on SE interventions at employee level. It might be interesting to look at SE interventions at other levels of organizations, for example at the level of the managers.[32]

In the SE studies in this review, including more SE core components in the content of the interventions was not related to more effective outcomes. This might be due to the choice and measurement of the outcomes, and the inconsistent aligning of the intervention content and outcome measures. Future SE interventions should be developed which preferably better integrate the SE core components and address them in the outcome measures as well, to frame well-considered SE interventions and evaluations.

A full-process evaluation should be an integral part of a SE intervention, to explain both the (lack of) effectiveness and to understand the implementation process in terms of possible program failure. Further research might focus on whether more comprehensive SE interventions (i.e., including all SE core components) are more effective or whether specific intervention ingredients are more effective. Research should not only focus on employees with fixed contracts; it also needs to examine specific (precarious) occupational groups (e.g., younger employees, self-employed, or employees with a flexible contract) as these populations are growing.

Defining and conceptualizing SE is ongoing. Both in the SE definition and in the interventions studied, 'valuable work' appears to be effective. However, the longitudinal and long-term nature of SE in particular receives little attention. Many SE researchers have only addressed older employees, as our review confirmed (except one study). In accordance with the SE definition, we think that SE interventions cannot start early enough, definitely prior to the occurrence of chronic diseases that are prevalent in older workers.[33] Employers are advised to focus on SE and prevention as early as possible in an employee's career, as it will be beneficial to improve the employability of an employee later in life.[34] Longer follow-up periods (in both intervention and research) are highly recommended. In particular, effects on health might be the result of a long-lasting process. The currently more flexible and dynamic labor market might be a practical factor hindering long-term follow-ups for many employees. Researchers might consider the use of online surveys via national tax or social security registers to perform longitudinal intervention research.

This review focused specifically on employer-initiated SE interventions to promote employees SE. As mentioned above, the responsibility for SE is shifting, and different stakeholders with different interests are involved (employee; employer; government). Employers and employees could have a shared responsibility to improve SE, in which employees take their own responsibility, and the employers should enable a supportive work context to do so.[4] In a dynamic environment, taking care of employees' SE might not be the sole responsibility of employers anymore. The government and social partners should also play a role in terms of SE policy development.[35] SE will increasingly become a joint effort of multiple stakeholders. Employers and governments could play a role to address early employability awareness among younger employees. The self-employed employees might also be of interest for the government, for whom it would create awareness, provide campaigns, and develop regulations. All people of working age should become more aware as this could be beneficial for their later working career and might influence long-term improvements.[36]

Conclusion

Employers, employees, and social partners are facing a challenging and dynamic labor market in which SE is becoming increasingly important. Employers develop or buy and implement SE interventions to improve employees' SE. This review found only moderate to weak evidence for the effectiveness of employer-initiated SE interventions. The number of SE interventions is limited, and most do not incorporate all four core components of SE (i.e., health, productivity, valuable work, and long-term perspective). Positive effects were shown on the 'valuable work' outcomes. More attention is needed on the development of higher quality SE interventions and building a more solid evidence base for the effectiveness of those interventions, which might be beneficial for stimulating employees' SE.

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CHAPTER 3

Using intervention mapping to develop 'Healthy HR' aimed at improving sustainable employability of low-educated employees

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Abstract

Background

The perspectives of low-educated employees are often neglected when designing sustainable employability (SE) interventions. As a result, the interventions offered by the employer do often not align with the needs of low-educated employees. This particular group should therefore be actively involved in the process of developing and implementing SE interventions in their work organizations. The current paper describes the development process of a web-based intervention for HR managers and direct supervisors aimed at improving the SE of low-educated employees. This intervention is specifically designed to involve low-educated employees.

Methods

The first four steps of the Intervention Mapping (IM) approach were used to systematically develop the intervention with the active involvement of stakeholders. Step 1 comprised a needs assessment including a literature review, empirical evidence, scoping search and several focus group interviews with employees and with representatives of employers. Step 2 formulated the intervention objective. During step 3, suitable theoretical methods were selected and translated to practical applications. Step 4 involved the development of a web-based intervention by integrating all information from the preceding steps.

Results

The needs assessment indicated that the employees' active involvement and employees-employer genuine dialogue should be essential characteristics of an SE intervention for low-educated employees. The online toolkit 'Healthy HR' (HHR) was developed, which contains eight steps. Each step consists of one or more tasks helping the employer and employees with developing and implementing SE interventions themselves. One or more dialogue-based tools support each task. The leading principle providing structure within HHR was Adapted Intervention Mapping.

Conclusion

Principles of IM appeared to be useful to develop the intervention HHR systematically. This development process resulted in a practical online toolkit that supports employers in the development and implementation of local SE interventions tailored to the needs of low-educated employees. These employees should be actively involved in the process through a dialogue-based approach. By using IM principles, HHR is expected to increase the effectiveness in bettering the health and well-being of low-educated employees.

Introduction

Given today's rapid ageing workforce and the major technological changes, employees' sustainable employability (SE) becomes increasingly important for employers.[1-3] Therefore, employers search for approaches to promote healthy, productive, and valuable work in their employees, now and in the future. SE, a subdomain within the field of occupational health (OH), might be a concept of particular relevance for low-educated employees, as – compared to higher-educated employees – these employees have significantly higher risks of poor health, adverse work conditions, and premature labor market exits.[4,5] Socioeconomic health inequalities remain large.[6,7] To improve the SE of low-educated employees, the workplace (organizational level) seems to be a suitable setting to reach this particular group.[8] Although these employees show more health problems and often face poor work conditions, they participate less frequently in workplace health interventions.[3,9] Additionally, when participating, the effectiveness of these interventions is often limited.[10] An alternative approach is needed as they probably need additional support when it comes to improving their health and SE.[3,4,11] Interventions with a too narrow base may thus not fit the reality and needs of this group of employees.[12]

Three shortcomings are observed in existing SE interventions for low-educated employees. First, many of them are developed without including these employees' perspectives.[12] Most often, health-promoting changes at the workplace are decided upon in a top-down way, thereby shutting the door on employee participation and ignoring the employees' voice[13]; this might be particularly disadvantageous for low-educated employees.[12,14] Second, despite the urgency, there is a lack of well-developed SE interventions for this particular group.[4,15] Such interventions ought to be based on theory, empirical evidence, and the experiences of the involved stakeholders.[15,16] To guarantee a systematic development and the involvement of relevant stakeholders, the Intervention Mapping (IM) approach is recommended.[17] Third, employers largely depend on ready-made health programs of external providers, such as consultants and policymakers.[13] However, given that organizational contexts and realities vary, it is important – in a genuinely participatory approach – that employers have a larger say and introduce the development and implementation of SE interventions themselves.[8] This study aims to address these shortcomings.

This paper describes the underlying development process of a web-based intervention ('Healthy Human Resources' (HHR)) for employers aimed at improving the SE of low-educated employees using IM. Job control, active involvement, and dialogue between employees and employer have been selected as the core concepts of interest.[18] The literature indicates that these concepts, which partly overlap, contribute to the optimal implementation and effectiveness of SE interventions for this group.[19-22] Job control (or level of autonomy) refers to an employee's ability to influence his or her work

environment and to participate in decision-making on the job, which is related to positive health outcomes.[23] Job control will be stimulated by giving employees an active voice and involving them in a participative role, in other words, by creating opportunities for a genuine dialogue between employees and employer. Furthermore, to systematical develop HHR, the current study used IM which has been successfully applied in previous, evidence-based workplace interventions.[15,24-26] To systematically integrate the core concepts of interest to lower educated employees in an IM approach is, to our knowledge, innovative for this specific population. In line with the terminology used in the international social epidemiology literature[27], the term "low-educated" was chosen to indicate the target group of this intervention, as all included employees performed low-skilled jobs and the majority was low-educated. The focus of this paper is to describe the development of a web-based intervention using IM and structured according to the first four IM steps (development of an intervention).

Materials and methods

The development of the intervention builds on the IM approach. The IM approach was originally meant for the development of tailored, theory- and evidence-based community health programs suited to the needs of a specific population and strongly built on stakeholder involvement.[17] It consists of six consecutive steps: (1) needs assessment, (2) formulating intervention objectives, (3) selecting theoretical methods and practical applications, (4) developing the intervention, (5) planning for program adoption and implementation, and (6) planning for evaluation. The results of each step constitute the input for the following step. The present paper describes the development of HHR, that is, IM steps 1 to 4. IM steps 5 and 6 will be published in future papers.

Participatory development

HHR was developed within a collaborative environment by researchers (authors of this manuscript), supported by an organizational consultant, and five Dutch work organizations deploying low-educated employees: 1) a governmental institution, 2) a cleaning company, with different worksites, 3) a warehouse, 4) a manufacturing company, and 5) a meat-processing company. These organizations were recruited via the researchers' established networks; Human Resource (HR) managers in the network were contacted. In addition, HR managers of suitable organizations were approached by email. For each organization, the selection of low-educated employees took place on department level. The researchers asked the HR managers to select departments in which employees performed low-skilled jobs. The vast majority of employees working at these departments had lower educational levels, varying from no education to secondary vocational education. Some of the participating work organizations mainly

employ uneducated or low-educated employees, while others employ a more heterogeneous group of employees, including a minority of intermediate and higher educated employees, who still perform low-skilled jobs. The organizational sizes varied from 40 to almost 4000 employees. In four of the five organizations, the employees mainly performed physically demanding work, while the employees in organization 1 performed relatively simple administrative tasks (deskwork). All organizations have a relatively high percentage of sickness absence (>10%, including long-term absence) among their low-educated employees and all were interested in improving the health and vitality of these employees. Due to a tense Dutch labor market for low-skilled employees, many employers tend to retain their low-skilled employees. Moreover, a considerable dismissal protection under Dutch legislation for employees (different from flex workers and self-employed) still exists, which is more protective than in other social systems.[28] The strategy to take the employee perspective as a starting point, having access to a self-led intervention (without external consultancy that is without extra costs) and free use of the online toolkit HHR, were the main reasons for organizations to commit to this study.

In each organization, several stakeholders were invited by the research team to participate in the development phase: 1) representatives of the target group of low-educated employees, and 2) HR managers, line managers, and supervisors on behalf of the employer (representatives of the employer and eventually HHR end-users). This study has been approved by the Medical Ethical Committee of the academic hospital in Maastricht, The Netherlands (METC 2017-0311). All participants were asked to sign an informed consent form when they start their participation in the study. Throughout the development phase, one member of the research team created a monthly update in the form of a flyer for the participating organizations. The HR manager or supervisor distributed these flyers among their employees. These flyers aimed to keep all involved employees and other relevant stakeholders informed about the development process of HHR.

IM Step 1: needs assessment

The objective of the first IM step was to assess the current situation with regard to SE in general and the needs of the low-educated employees and representatives of employers within the participating organizations. The needs assessment was conducted via a literature review of empirical studies, a review of the theoretical literature and concepts, a scoping search of available online tools within OH, and interviews and focus groups. The purpose of the literature review was to identify effective SE interventions and potentially effective ingredients of SE interventions. In the review of the theoretical literature, the researchers focused on the three core concepts (job control, active involvement, and dialogue). A scoping search of available online tools in different disciplines was carried out via a web search using different search terms. Four

interviews and eleven focus groups with employees and five focus groups with representatives of the employer were conducted in the five collaborating organizations.

Focus group participants and procedures

To ensure a safe climate for discussing SE (intervention) aspects, separate focus groups (so called 'expert groups') for the employees and the employer's representatives were organized in each organization. The participants were recruited voluntarily or invited by their supervisor. The low-educated employees in the focus groups were a cross-section of the employee population of the participating departments with regard to variables such as gender, age, and work contract. Every participant signed an informed consent. The focus groups were moderated by two researchers. The duration of the interviews and focus groups varied from 1 to 2 hours. The following topics were discussed: 1) their current views, problems, and needs with regard to SE; 2) current ways of communication and dialogue within the organization, and 3) needs and preferences about the content of HHR (see Appendix 3A for the focus group guide). Simultaneously, within each organization, short dialogues were performed with representatives of the employer (most often a human resource (HR) manager). These interviews aimed to discuss background information about the organization, such as its vision and structure. Both interviews and focus group meetings were digitally recorded, and notes were taken during the meetings. The data was transcribed via clean verbatim (e.g., no filler words) and paraphrasing. Data was analyzed thematically by creating mind maps of each organization, and all members of the research team eventually concurred on the themes identified.

IM Step 2: formulating intervention objectives

The aim of IM step 2 was to formulate the intervention objectives. The final intervention objective refers to what should be changed to meet the needs of employees and representatives of the employer, that is HR managers and direct supervisors (hereafter both are used interchangeably), as identified in IM step 1. Necessary behavioral actions were identified at the individual and organizational levels. These actions were needed to achieve the desired change and outcomes, as defined in terms of the three core concepts (job control, active involvement, and dialogue).

IM Step 3: intervention design: select theoretical methods and practical applications

The third IM step involved identifying appropriate theoretical methods and translating them into practical applications that could be used within the intervention. A theoretical method refers to behavioral change methods with a strong theoretical basis.[17] Inspired by input derived from IM step 1, suitable theories were selected. Handbooks were consulted on problem-solving, positive psychology, and organizational

change management. By translating the theoretical method into a practical behavior, this also led to practical applications (17). For instance, problem-solving (a theoretical method) was translated into brainstorming sessions (a practical application).

IM Step 4: intervention production: develop intervention components and materials

In IM step 4, the goal was to apply and integrate the results from IM steps 1-3 into HHR. To ensure that the overall intervention objective fitted both the target population and the organizational context, brainstorming sessions were organized with the research team to outline the final scope, sequence, and layout of HHR. A graphic designer created the lay-out and technological features of HHR in accordance with a design document developed by the research team. The content of HHR was initiated and discussed with all research members, including an organizational consultant. The content was adjusted via an iterative process. A final task in this step was to perform a usability test of HHR on three aspects: its look and feel (the attractiveness and layout of HHR), navigation system, and content. Several stakeholders (N=5) of the participating organizations, an independent researcher, and an independent HR manager tested HHR. The usability test was based on 'think-aloud interviews' in which participants tested HHR by thinking out loud while they performed an action[29] and/or filling in a checklist focusing on the aforementioned usability aspects.

In time of the development of HHR and its content, the COVID-19 pandemic occurred and impacted practically all aspects of societies worldwide, including work organizations and employees.[30] Also within Dutch work organizations, the COVID-19 pandemic had large consequences for the processes and operational management, including OH and HRM. Several participating organizations in our study even went into a complete lockdown. Therefore, the researchers assessed whether the content within HHR might be adapted due to the COVID-19 pandemic.

Results

IM Step 1: needs assessment

Table 3.1 summarizes the main results of the needs assessment per procedure.

Table 3.1 Summary needs assessment.

SYSTEMATIC LITERATURE REVIEW	THEORETICAL LITERATURE	SCOPING SEARCH
SE core components for SE interventions content: - Health - Productivity - Valuable work - Long-term perspective	Job control Active involvement Dialogue Participatory approach	Step-by-step layout Roadmap Field of OH and HRM

EXPERT GROUPS		
1) Current view sustainable employability		Overall Theme
Expert group employees	Expert group employer	
- Stress due to high work workload (shortage of personnel; targets) - High physical workload (body complaints) - Health problems due to shift work (company 4 and 5) - Physical environment (noise; temperature differences; safety) - Unhealthy food at the canteen (company 4 and 5)	- Pressure from higher management level	Intervention should focus on physical work conditions
- Social work climate suboptimal - Lack of social support supervisors - Lack of respect - Lack of an open and safe environment - Lack of motivation - Lack of trust to supervisors - Poor leadership of supervisors	- Lack of commitment from the employees - Negative mindset/attitude of employees - Culture of fear of employees - Lack of trust to employees	Intervention should focus on psychological work conditions
2) Ways of communication and dialogue		
- Bad communication/ monologue (one-sided) - Unclear communication - No dialogue - No feedback after asking questions - Different communication channels (newsletter; intranet; television screen)	- No involvement of employees in work meetings - Employees act passive - Difficulties to reach the target group	Dialogue and Communication is the key
3) Needs and preferences		
- To be taken serious by the employer - To improve the work environment – open and safe - To improve the communication	- Tools for two-sided communication - Improve the mindset of employees - Communication skills - Tools to create better organizational culture - Easy applicable and accessible - Online	

Systematic literature review

The systematic literature review about effective employer-initiated SE interventions and potentially effective ingredients of SE interventions has already been published.[16] The review included all interventions framed as SE interventions by the authors themselves, hence the interventions varied widely. In short, based on the results of six intervention studies, it was concluded that a SE intervention should include four SE core components: "health", "productivity", "valuable work", and "long-term perspective". Considering the content of the interventions evaluated, none addressed all four SE core components. The SE core components "health" and "valuable work" were addressed in all interventions. The "productivity" and "long-term perspective" components were addressed less often. The quality of the evidence for the effectiveness of the interventions was weak to moderate, probably because of inconsistencies in the operationalization of the outcome measures and the lack of an alignment between the intervention content and the outcome measures. One evaluated, moderate-quality study showed a positive effect, possibly resulting from dialogue-based components within the intervention content.[31] The results of the systematic literature review were used to frame SE interventions more clearly and build further on the dialogue-based component used within the content of HHR.

Theoretical literature and concepts

A more in-depth review of the theoretical literature on the core concepts (i.e., job control, active involvement, and dialogue) refined our insights. The concept of job control originates from the job demand-control model.[23] For low-educated employees, job control is especially important as they experience low job control in their work, and it is well-known that poor working conditions such as low control at work is associated with health problems and poor health.[4,23,32-34] For them, it is very hard to self-direct and to take more job control. They might never have had the opportunity to acquire the skills, means, resilience, and literacy (including health literacy) that are needed for this.[35] The type of work they perform (mainly physical demanding), hierarchical relationships, and the top-down approach within organizations do not easily facilitate job control. However, organizational interventions that include a participatory approach are described as promising solutions to increase job control.[19] Therefore, employees who participate in such interventions get the opportunity to take better self-direction and eventually to experience genuine job control more often, which may eventually improve health and SE.

The second and third concepts are active involvement and dialogue. Workplace interventions are more successful when employees and direct supervisors are truly involved and participate in the initiation phase (i.e., preparation and readiness for change) and active intervention phase (i.e., problem analysis and solving and development and implementation of interventions).[21,36] By using the employee's

knowledge (tailoring), this participatory approach leads to an optimization of the fit between the intervention and the organizational context. It also fosters a sense of ownership among employees and creates a positive, collaborative climate between supervisors and employees.[24,37,38] Once low-educated employees have been consulted, heard, and truly involved, starting a dialogue and finding solutions together are crucial to improve the effectiveness of interventions.[20,39,40] Their self-esteem and self-efficacy are boosted[41], and as the dialogue stimulates mutual trust, the communication, the employees' work engagement, and perceived working conditions improve.[42,43]

We expect that a participatory approach that integrates a dialogue dimension and actively involves low-educated employees in the decision-making process will lead to increased job control, resulting in improved health and more generally in the promotion of SE.[23,37,41,44]

Scoping search on existing online tools

The scoping search on the web identified various online tools that have been developed for efficiently supporting human resource management (HRM) and OH.[45,46] One common theme in these online tools was visualization using a step-by-step plan or roadmap.

Focus groups: employees and employer

Physical working conditions, psychological work conditions, and dialogue and communication were identified as the three main themes that are important for SE; the content of HHR should thus focus on these themes. Table 3.1 summarizes the most important findings per theme per focus group (expert group). As important for their SE, employees mentioned an optimal social (e.g., respect, trust, support, taken seriously) and physical work environment (e.g., noise, temperature). HR managers and supervisors acknowledged that engaging in dialogue with employees is particularly relevant to improve the employees' SE. However, they mentioned a lack of tools, resources, and expertise to do so. Several aspects were reported as important barriers for the promotion of SE, such as a passive attitude of employees, a traditional company culture ('work hard and do not complain'), and a lack of time. Moreover, mutual distrust was observed between employees and supervisors. Often the HR managers were the initiators of SE-related projects within organizations. They preferred to involve the direct supervisors as well due to the daily contact and short line with the employees. Difficulties were mentioned in reaching the group of low-educated employees and in effectively communicating with them. Both employees and supervisors often reported poor communication within the organization. Improved communication and dialogue was desired from both parties, but unfortunately often lacking. Finally, HR managers and supervisors found that a website would be the most

efficient way to access HHR, because they thought it is easily applicable in daily business.

From IM step 1, we may conclude that it is important that low-educated employees have a say and are actively involved in the intervention development and implementation in their organization. In practice, this appears to be difficult. Therefore, it is important that a web-based intervention should support HR managers and supervisors gradually to facilitate such a process of active involvement and dialogue.

IM Step 2: formulating intervention objectives

The overarching objective of the HHR intervention was formulated as follows: To improve the SE of low-educated employees by supporting HR managers and direct supervisors to involve their employees in developing and implementing tailored SE interventions, with a dialogue-based approach. Further, we hypothesize that the application of HHR within organizations improves the SE of low-educated employees, particularly through increasing the low-educated employees' control at work.

To meet the overarching intervention objective (improve SE), behavioral and contextual actions are necessary at both the individual (employees and HR managers; supervisors) and the organizational level. At the individual level, all groups need to express positive behavior to improve SE. They need to share the overarching objective by becoming aware of the advantages of HHR. Behavioral actions on the HHR process level (to develop and implement tailored SE interventions) have to take this into account as well. All groups need to express a positive attitude to participate as an active member and need to be able to invest to create tailored SE interventions. They need to feel confident to participate in a dialogue. Employees need to express confidence in their ability to take more control and obtain the feeling of ownership. HR managers and direct supervisors need to be able to explain, encourage, and facilitate the dialogue-based process. They should be able to tailor it to the most important problems of the low-educated employees and implement tailored solutions in the workplace. They also have to facilitate commitment and active involvement with all involved stakeholders. Therefore, they, particularly direct supervisors, play a pivotal role in the entire process. At the organizational level, the higher management should be committed to invest in the availability of time, budget, and additional resources for HHR (e.g., a room to meet). It has to offer the HR managers and direct supervisors these resources to use HHR to develop their SE interventions. Furthermore, for the bottom-up approach, a different, non-hierarchical mindset at different organizational levels is needed.

IM Step 3: intervention design: select theoretical methods and practical applications

Given the formulated intervention objective of IM step 2, Adapted Intervention Mapping (AIM) was chosen as the overall theoretical method to structure HHR.[24,47] Avoiding the rigor of IM, which will not be practically feasible to use by employers, AIM offers a structure to develop and implement tailored SE interventions in organizations.[24]

Theoretical methods and practical applications

Using AIM as the leading theoretical method within HHR, the researchers organized HHR along eight smaller steps that are easy for HR managers and supervisors to recognize within the context of their usual tasks. Each step consists of several tasks which can be completed by means of tools (practical applications). To identify suitable theoretical methods for each step and task, the researchers consulted behavioral and organizational science theories, such as empowerment theory, social cognitive theory, and the diffusion of innovations theory. Table 3.2 presents suitable theoretical methods and types of tools (practical applications) for each step within HHR. Methods of well-known, fundamental theories within IM for behavior change are selected, as well as of theoretical methods other than related to IM. For example, organizational theories informed our use of participatory problem-solving as a theoretical method for HHR steps 2 to 5. This method helps the direct supervisor and employees to translate the problems identified in the needs assessment into potential solutions, to prioritize, and to make an action plan.[17] The citizen participation ladder of Arnstein[48] and the communication framework by Quirke[49] are consulted to help the HR manager or supervisor to identify the level of employee involvement in each task. Moreover, other theoretical methods were identified (not from IM), for instance shared decision-making. This method is in particular beneficial for lower socioeconomic status groups.[22]

Next, the researchers brainstormed about how to translate the suitable theoretical methods into tools (Table 3.2). For example, for participatory problem-solving (a theoretical method), the researchers included different working formats (tools) in HHR step 3 (our problems), which support the HHR-user to facilitate a meeting. Input from the focus groups (IM step 1) provided information about other tools as well. An important need was to adapt the Maastricht Instrument for Sustainable Employability (MAISE-NL), which was recently developed and validated[50] to the language of the target group (tool within HHR step 2), which resulted in an adapted questionnaire. Voting cards (tool within HHR step 4) were also an outcome from the focus groups. The researchers decided that the intervention should comprise different tools (Table 3.2).

Table 3.2 Overview of each steps within HHR: goal, theoretical methods and type of tools.

Steps HHR	Goal	Theoretical methods (related theory*)	Type of tools (Practical applications)
Step 1 Prepare together	Process preparation of HHR by the HR manager to involve and commit all relevant stakeholders	Participation (ET) Facilitation (SCT) Persuasive communication (SCT)	Communication tips and information (guidelines) Fill-in templates
Step 2 Measuring is knowing	Prepare and conduct a needs assessment	Participation (ET) Participatory problem-solving (OT) Persuasive communication (SCT)	Checklist Communication tips and information (guidance) Fill-in templates Questionnaire
Step 3 Our problems	Brainstorm, discuss, and prioritize the problems identified during needs assessment	Participation (ET) Participatory problem-solving (OT) Persuasive communication (SCT) Shared decision-making (22, 51)** Problem-based learning (52)** Self-developed methods**: education and trainers' material	Working format Checklist Communication tips and information (guidance) Fill-in templates
Step 4 Our solutions	Brainstorm, discuss, and prioritize solutions for the problems discussed in step 3	Participation (ET) Participatory problem-solving (OT) Persuasive communication (SCT) Shared decision-making Goal-setting (GST)	Library Working format Checklist Communication tips and information (guidance) External links to reliable sources Fill-in templates
Step 5 Action plan	Discuss and set up an action plan	Participation (ET) Participatory problem-solving (OT) Persuasive communication (SCT)	Working format Checklist Communication tips and information (guidance) Fill-in templates
Step 6 Let's start	Implement and continue the action plan	Participation (ET) Disseminate, adopt, and implement (DIT) Reinforcement (SCT) Persuasive communication (SCT)	Working format Checklist Communication tips and information (guidance)
Step 7 Evaluation	Evaluate and maintain the action plan or successful aspects	Participation (ET) Evaluation Persuasive communication (SCT) Feedback (GST)	Working format Checklist Communication tips and information (guidance)
Step 8 Along the way: Obstacles in process	Perform a sound dialogue and good cooperation	RDIC model (53)** Persuasive communication (SCT)	Working format Communication tips and information (guidance)

*Related theories of the theoretical methods: SCT, Social Cognitive Theory; ET, Empowerment Theories; OT, Organizational Theories; DIT, Diffusion of Innovations Theory; GST, Goal Setting Theory. **No theoretical method within IM.

Seven tool types were chosen, with one type, 'Library', not being based on a theoretical method:

1. Measure (questionnaire) to tap needs and evaluate effects among employees.
2. A working format (e.g., brainstorm technique) based on theoretical methods or experiences of the research members, which can be used during meetings.
3. A checklist, including the most important topics of that task, to support the HHR-user during a meeting or to fulfil a task.
4. Communication tips and information (guidance) based on theoretical methods and evidence-based/sound examples.
5. Links to reliable external and scientific sources.
6. Fill-in templates (e.g., poster) to support the HHR-user during a task or to collect information together with their employees.

Library, including a review of existing solutions (evidence-based), which can be used as a source of inspiration. The library consists of: 1) a variety of simple solutions, which are relatively easy to apply and inexpensive and 2) evidence-based interventions in the work setting.

IM Step 4: intervention production: develop the intervention

The results of the three previous IM steps were operationalized in the HHR intervention along the eight steps and presented via the website, named: 'Healthy Human Resources' (HHR) (in Dutch: www.gezondhr.nl). It is assumed that the HR manager initiates HHR. A direct supervisor or an assigned project leader might also apply HHR. A detailed description of the main outline of the steps, tasks, and tools has been published in (18) and added as additional file (See Appendix 3B). Figure 3.1 depicts the page structure and content of HHR. The texts within HHR are easily readable and lack scientific jargon. For all tools, simple and concrete linguistic usage was applied, which is in line with the perceptions and ways of thinking of the low-educated employees. A detailed overview is available upon request from the first author (EH).

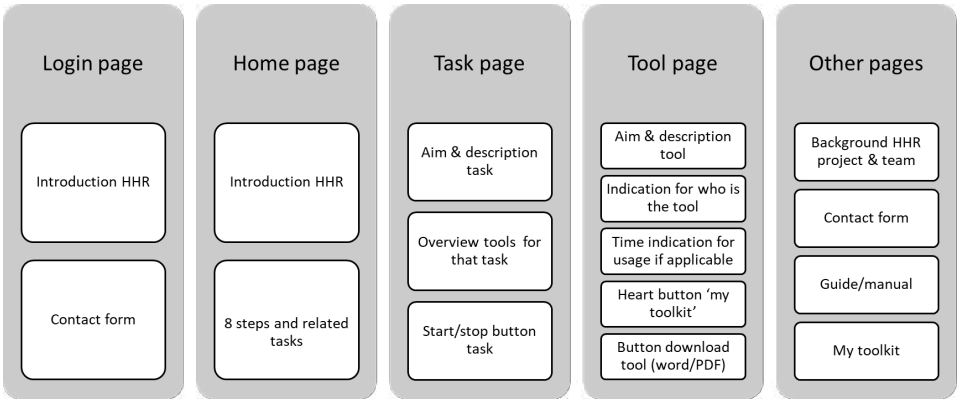

Figure 3.1 Page structure and content of HHR.

Figure 3.2 describes the content of one example tool (tool type 1: working format). Furthermore, HHR-users can select specific tools that best match their context and their employee's situations to develop a personalized toolkit ('my toolkit') for needs assessment and the development and implementation of tailored SE interventions.

Step 3: Our problems
Task: Prioritize the most important problems
Name tool: How to prioritize our problems?
Structure of the tool:

- Short description about the goal of the tool, namely prioritizing the problems originating from the former task.
- Section: How should this be done?

Collect all the problems and visualize it for the group members.

- Instruments:
  - A poster with four quadrants: important/immediately (red); important/not immediately (light red) not important/immediately (orange); not important/not immediately (pink). This poster can be downloaded and printed.
  - Post-its/stickers and pencil
- Working procedure:
  - Every group member starts to divide the problems on the matrix by looking at:
    - Is that specific problem important or not important?
    - Should that specific problem be tackled immediately or can it be solved in the long-term?
  - Focus on the red and light red quadrants and discuss their contents.
  - Choose a top 3 of problems in dialogue with the group members to start in the next steps. This can be done by simply discussing or voting on them.

Figure 3.2 Example tool: How to prioritize our problems?

Testing HHR

After HHR was initially completed, five stakeholders tested its usability. It was perceived as user-friendly, attractive, and a very complete toolkit in general. Based on the usability test, the researchers made minor adjustments to the toolkit, such as simplifying the navigation, adding in a guidance tour about the most common features, and textual changes. Stakeholders indicated that they were not able to judge the content of the tools as they did not yet use them.

Adaptations of HHR in the context of the COVID-19 pandemic

The online format of HHR guarantees good access in times of current and future pandemics. New tools for online meetings and information about dealing with the OH aspects of COVID-19 were added. It is our hope that HHR also improves the employees' say in current and future company-specific, lockdown and lockout measures.

Discussion

This paper describes the development process of the 'Healthy Human Resources' (HHR) intervention. This is an online toolkit to support HR managers and direct supervisors with actively involving their low-educated employees by developing and implementing their own tailored SE interventions in order to improve their SE. HHR was developed using the first four steps of IM and consists of eight steps, each represented by tasks and supportive tools for performing the tasks. The tools can be a questionnaire, working formats, checklists, communication tips and information, external links, fill-in templates, or a library with solutions and interventions.

The development took place in a collaborative environment of researchers, a consultant and employer, and low-educated employees' representatives from different types of organizations and sectors. The researchers used this participatory approach, which is acknowledged as having the potential to improve the results of organizational interventions[19], right from the beginning. Throughout the development phase, the researchers were constantly in dialogue with the five employers and their low-educated employees. HHR focuses on creating a collaborative environment within an organization in order to develop tailored SE interventions. HHR can be considered as a generic toolkit; it includes a wide range of tools that are specifically aligned to settings with low-educated employees. The HHR-user can select the tools that are applicable in their organization and that best match their group of low-educated employees and their work context.

The traditional IM approach has been proven to be a useful tool to design, implement, and evaluate complex, systematic, theory-based interventions in the field of OH, such as return-to-work programs[45,54,55] or workplace health promotion programs.[25] The researchers used the adapted version of IM (AIM) as the leading principle within the intervention itself. AIM is more suitable and practically feasible within a work setting than IM, as former studies showed.[24,47] By means of AIM, organizations will be able to develop and implement their own tailored SE interventions autonomously.

Through its dialogue-based approach, the HHR intervention is the first systematic online toolkit that – in each and every component of the kit – is aimed at increasing the control of the low-educated employees on the intervention. It offers HR managers and direct supervisors a pragmatic way of working and at the organization level helps them to do a better job at improving the low-educated employees' SE. The literature and our focus group data revealed that HR managers and direct supervisors often lack the tools and resources to improve SE by themselves.[56] As it aligns to their usual tasks, such as negotiating with higher management, planning and budgeting, we developed HHR for easy adoption by HR. Establishing a true dialogue with the low-educated employees aims to restore the human aspect of HRM, which, we understand, will be new for most

of them, especially for the direct supervisors. The toolkit focuses explicitly on facilitating and encouraging active involvement of the low-educated employees during both the choice for SE interventions and the implementation of SE interventions. To optimize this way of working, tools and communication methods are aligned with the way of thinking and needs of low-educated employees. This was based on the needs assessment which indicated that HR managers/supervisors often experience difficulties reaching out to this specific group of employees and communicating effectively with them. Therefore, HR managers and supervisors are encouraged to focus on dialogue through which low-educated employees will get more control over intervention content and implementation. Further, the systematic development process of HHR might inspire researchers in the field of HRM and OH, as it provides important scientific and practical clues for (future) systematic and balanced development of HR interventions. The development of HHR can be seen as evidence-based and evidence-generating. The development phase was based on a combination of empirical evidence and thorough theoretical analyses, and included the perspectives of different stakeholders. Further research on the effectiveness of HHR is needed (IM steps 5 and 6). As one of the objectives of HHR is to develop and implement tailored SE interventions, it also facilitates an evidence-generating aspect. The SE interventions are tailored to the needs of the low-educated employees, which also generates evidence for new out-of-the-box tailored SE interventions. This can be shared as best practices between organizations with low-educated employees and as valuable input for OH research.

Some limitations need to be considered as well. We have chosen to develop and structure HHR as an intervention that can be initiated by an HR manager or supervisor, without involving any external consultancy. However, it is still unknown whether such self-led intervention can be carried out completely without any external consultancy.[24] HHR might be perceived as a 'disruptive' intervention as all hierarchical levels are stimulated to transform into active participants and start a dialogue, which will affect the power distribution in the organization – when done as intended – and the organizational culture in the long run. This is especially the case when a direct supervisor is not used to start and continue a true dialogue with the employees. However, if organizations really want to successfully develop and implement SE interventions, safe, open, and supportive workplace cultures are required. Sufficient time, resources, and budget also contribute to the success rate.[57] Although money is saved by not hiring an external consultancy, all employees need to be able to invest a part of their working time to co-create the SE intervention. Additional training on how to deal with HHR might be necessary. Therefore, a process evaluation study is needed to get insight into the barriers and facilitators of the implementation of HHR. Such a process evaluation becomes even more urgent in the current context of the COVID19-pandemic.

To apply HHR implies interdependency between the employees and their supervisors. The idea of HHR is that both parties share their problems and develop and implement solutions together. This ideally leads to a better understanding of each other, but could also enlarge the gap between them. Even when agreements have been made to empower employees and provide them with room for participation, managers might try to bypass these official agreements with informal actions in order to regain power.[53] Supervisors might manipulate HHR to their own advantage, by using their knowledge as a bargaining chip to force employees to take decisions in favor of the employer. This may result in 'window-dressing', instead of actual changes in the status quo, and employees are then left with even lower levels of involvement, motivation, and voice. We are aware of the fact that the HHR intervention might create 'pseudo voice'[58], that is, managers encourage employees to share their view and pretend to be interested without actually considering their input, because the decisions have already been made. HHR requires integrity and a sincere motivation to improve the SE of low-educated employees. Our research has a humanistic focus, with the aim to highlight employees' needs and values and giving them a true voice rather than solely aiming at the organization's existence or profit.[59,60] Labor unions and local workers' councils should stay alert to prevent abuse of the toolkit.

Conclusion

This study described the systematic development of the HHR toolkit. By involving their low-educated employees from the very beginning through an open dialogue, it enables (HR) managers to initiate the development and implementation of tailored SE interventions within their organization. The use of IM resulted in a well-developed intervention, using the principles of IM at two levels: to develop HHR and - using an adapted IM version - as the leading principle within HHR. This study contributes to the need for well-developed and tailored interventions in the field of OH and HRM. The added value of using a theoretical framework and of using IM in combination with a participatory development, we hope, has helped to align science within the field of OH to the daily practice in work organizations deploying low-educated employees. We expect the application of the online HHR toolkit to improve the SE of low-educated employees, as they will profit from regaining control over their work and having a true say about their needs.

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Appendix 3A

Focus group guide*

Start	Welcome Explanation of the goal of the focus group Practical issues: Explanation confidentiality and signing the informed consent form Room for questions
Background information	Short introduction round to acquire background information, such as age, gender, function, department, type of work.
Discussion topics/questions**	Discuss the participants' views, problems, and needs with regard to sustainable employability (healthy work) What does healthy work/sustainable employability mean for you? Ways of communication and dialogue within the organization Can you explain the current way of communication within the organization? And between you, your colleagues and your employer (e.g., supervisor/ HR manager)? Does a dialogue exist? Any problems with regard to dialogue? If problems exist: what are your thoughts about ways to improve the communication/dialogue? What do you need? Needs and preferences about the content of the intervention Healthy HR What kind of tools are already available in the organization? What kind of tools, skills and/or preconditions do you need? Something else?
Closing	How did you experience this meeting? Room for questions and other remaining additions Thank you for participation.

* The same focus group guide was used for the employees as well as for the representatives of the employer.
** Depending on the duration, group size and depth of the discussion within the focus groups, topic 1 was discussed in a first focus group session and topic 2 & 3, in a second focus group session.

Appendix 3B

Table: Steps, tasks and tools HHR.

Steps	Tasks	Tools
Step 1 Prepare together	Read the vision of HHR	Information about the roles within HHR Explanation about level of dialogue and involvement at each step
	Compose a project team	Communication tips & fill-in template to create a project group for development
	Develop a project planning	Information and guidelines for project planning Information and guidelines for project timeline
	Create commitment and involvement at all levels	Fill-in HHR poster template Fill-in HHR presentation template HHR Flyer
Step 2 Measuring is knowing	Plan, spread, and conduct needs assessment	Communication tips & checklist to conduct a needs assessment Checklist privacy "Healthy at work" Questionnaire
	Analyze results of the needs assessment	Manual questionnaire analysis Fill-in report template for results of needs assessment for management
Step 3 Our problems	Communicate the outcomes of needs assessment to employees	Fill-in presentation template for employees – traffic light model (red - take action; orange - prevent further deterioration; green - maintain)
	Brainstorm about relevant problems other than the results of needs assessment	Communication tips & working format for brainstorming – post-its
	Prioritize the most important problems	Communication tips & working format for prioritizing
	Inform all employees about the problem analyses	Communication tips & fill-in poster template for top 3 problems
Step 4 Our solutions	Identify and review existing solutions (evidence-based)	Library: two matrices. Matrix 1 with simple solutions. Matrix 2: examples of scientific evidence-based interventions. Overview of useful websites Checklist to develop an intervention by the organization
	Brainstorm about possible solutions	Communication tips & working format to conduct ideas about solutions on the work floor Working format for brainstorming – post-its & brainwriting
	Prioritize the best fitting solutions	Working format – select top 3 solutions per problem – criteria for prioritizing solutions: feasibility, costs, time, effect. Working format – formulation of SMART solutions & fill-in template
	Vote by employees on the best solutions	Fill-in voting cards template for employees to vote on the best solution
	Communicate about the selected solutions	Communication tips & fill-in poster template for selected solutions
Step 5 Action plan	Decision: How to approach the selected solutions?	Preparation tips for management meeting & fill-in sheet for preparation and decision document Letter template for management Communication tips & checklist for adaptation solutions
	Develop an action plan	Communication tips & fill-in sheet action plan (W-questions) Communication tips & fill-in template to create a project group for implementation
	Communicate about the action plan	Communication tips & fill-in action plan poster template
Step 6 Let's start	Implement the action plan	Communication tips & checklist implementation
	Periodic evaluation	Communication tips and approach for evaluation Working format for evaluation methods
Step 7 Evaluation	Conduct a final evaluation	Communication tips & approach for evaluation Working format for evaluation methods
	Plan for sustaining the successful solutions	Sustainability checklist
Step 8 Along the way: Obstacles in the process		Tips of do's and don'ts within a dialogue Working format to improve collaboration

CHAPTER 4

Validation of the MAastricht Instrument of Sustainable Employability (MAISE-NL) adapted for employees in low-skilled jobs (MAISE-Easy)

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Abstract

Background

Sustainable employability (SE) is important for work organizations. Recently, the MAastricht Instrument for Sustainable Employability (MAISE-NL) was developed and validated. This study describes the development and validation of an adapted version of the MAISE-NL, the MAISE-Easy, which can be used for employees in low-skilled jobs.

Methods

The adaptation of the MAISE-NL was based on six focus groups with employees in low-skilled jobs in various sectors. The MAISE-Easy was distributed among employees in five organizations. The response rate (n=1033) was 53%. Construct validity, reliability and criterion validity were analyzed by means of principal component analysis (PCA), confirmatory factor analysis (CFA), Cronbach's alpha and correlational analyses.

Results

The MAISE-Easy included 17 scales divided over four main areas: (1) level of SE; (2) factors affecting SE; (3) overall responsibility for SE; (4) responsibility for factors affecting SE. Construct validity, reliability and criterion validity were adequate to good.

Conclusion

The MAISE-Easy is a well-validated instrument for measuring SE among employees in low-skilled jobs in terms of the level of SE, factors affecting SE, responsibility for SE and responsibility for factors affecting SE. MAISE-Easy is recommended for both needs assessments and evaluation research in as yet underserved groups of low-skilled workers.

Introduction

Due to demographic changes and a progressively complex labor market, employers are faced with a graying, overburdened workforce, which increasingly suffers from (chronic) health problems.[1] Therefore, many employers take measures to improve their employees' sustainable employability (SE). However, there is a lack of scientific consensus on the optimal content of these interventions and a lack of high-quality evaluation studies of SE interventions.[2] Hazelzet and colleagues[2] suggest that effective SE interventions should be better tailored to the needs of both employees and employers and should at least address the four main components of SE that can be deduced from the definition of Van der Klink et al.[3]: health (e.g., physical and mental), productivity (e.g., work ability), valuable work (e.g., meaningful work and positive attitude) and a long-term perspective (e.g., future employability, long-term effects). We consider SE to be a result of an employee–job environment interaction rather than only an individual characteristic. This is also in line with the notion of Van der Klink et al.[3] Thus, an employee who is healthy, works productively and feels engaged now and in the future, has the positive attitude and competences that fit the job, is sustainably employable.

However, in the development and implementation of SE interventions, the employee perspective is often ignored, even though it is known that employees consider SE to be a shared responsibility between themselves and their employer.[4] The lack of a solid evidence base for SE interventions might relate to a lack of good quality measurement instruments for this concept.

There is an urgent need for a valid SE measurement instrument, which expressly includes the employee's perspective, is easy to use for researchers, employers and employees, and preferably measures the four core components of SE.[5] SE measurement instruments based on the employees' perspective currently fall short, particularly for the understudied group of employees in low-skilled jobs. A total of 39% of the Dutch labor population work in this type of jobs.[6] These employees generally have lower levels of education, and their work is often characterized by low levels of job control and high physical demands. Employees in low-skilled jobs have different needs, resilience, skills and knowledge than employees in middle or high-skilled jobs.[7,8] Moreover, they may have a different perspective on SE than higher-skilled employees with higher educational levels.[5] All this may negatively impact the validity of SE measures in this target group and may also explain the low level of response to questionnaires in this group of employees.

In an earlier study, the Maastricht Instrument for Sustainable Employability (MAISE-NL) was developed.[5] The MAISE-NL (which was the basis for the MAISE-Easy) was based on the then available literature on SE and interviews with experts, professionals working in

the field and employees. This was a rather explorative process in which we expressly wanted to include the employee perspective. A selection of items was provided to a group of employees, and they were asked about what is important for them with respect to sustainable employability (SE). This process was to a lesser extent guided by theoretical notions on concepts or dimensions related to SE. The measurement instrument resulting from this process (MAISE-NL) was validated first in an explorative factor analysis, and the results were confirmed in the confirmative factor analysis (CFA). These analyses led to two major factors of SE, which were labeled as "productivity" and "health". The productivity subscale reflects an employee's ability to be productive, avoid sickness absence, work until retirement and make a decent living. The health subscale of the MAISE-NL reflects an employee's physical and mental health and the sense of performing meaningful and useful work. The MAISE-NL aimed to address the disadvantages of otherwise valuable existing measurements for SE, such as the capability set for work[9] (highly complex) and the vitality scan[10] (primarily developed from an employer's and theoretical perspective and validated in an elder and relatively highly educated sample of employees). The MAISE-NL encompasses five main areas: (1) the meaning of SE, (2) the level of SE of the employee, (3) factors affecting SE, (4) the responsibility for SE and (5) the responsibility for factors affecting SE. The MAISE-NL has been tested and validated in samples consisting of middle to highly educated employees and appeared to have good construct validity and reliability.[5]

Aim of the study, research questions and hypotheses

This paper aims to describe the development process of an adapted version of the MAISE-NL for employees in low-skilled jobs, the MAISE-Easy, and to assess the psychometric properties of the MAISE-Easy in terms of construct validity, reliability and criterion validity. We hypothesized that the factorial structure of the MAISE-Easy will be confirmed *(Hypothesis 1a)* and that Cronbach's alphas of the MAISE-Easy scales will be adequate to good (>0.70)[11] *(Hypothesis 1b)*. With regard to the criterion validity, we hypothesized that the level of SE (MAISE-Easy Area 1 (Area 2 in MAISE-NL)) will correlate positively with the criteria vitality and work engagement *(Hypothesis 2a)*. We also hypothesized that the MAISE-Easy Area 1 differentiates between the subgroups regarding gender, age and educational level (all grouped as *Hypothesis 2b)*. We did not formulate specific hypotheses regarding the criterion validity of (responsibility for) factors affecting SE (MAISE-Easy Areas 2, 3 and 4).

Materials and methods

Development of the MAISE-Easy for employees in low-skilled jobs

Using the input of focus groups, the MAISE-Easy consists of the adapted scales from the MAISE-NL. It is supplemented with several existing scales, as well as newly developed

scales and items, which are relevant for employees in low-skilled jobs. The MAISE-Easy is aimed at employees in lower-skilled jobs rather than at employees with a low educational level per se.

Six focus groups were organized with employees in low-skilled jobs in five Dutch companies from the financial, cleaning, logistic, food and industrial sectors. The number of employees in the focus groups varied from 2 to 9, and the focus group meetings lasted about two hours. Each focus group meeting consisted of two parts. The first part of the meeting was spent on asking employees in low-skilled jobs about the meaning they attached to SE. The second part focused on the MAISE-NL and was inspired by the "cognitive debriefing method"[12] meaning that, for each item of the MAISE-NL, employees were asked to actively look at the MAISE-NL and give their first impressions. Examples of questions asked were: "Is it clear and understandable?", "Is it easy to fill in or not?", "Do you believe other colleagues can fill it in?", or "What kind of items concerning healthy working are you missing?". After the first round of the focus groups, the MAISE-NL appeared to be generally clear and understandable for employees. It seemed desirable though to rename SE "staying healthy at work" throughout the whole questionnaire to increase the comprehensibility for employees in low-skilled jobs. All items were checked for positive formulation and adjusted if necessary.

Further, the MAISE-NL contained an area about the employees' ideas about the meaning of SE and an area tapping the level of SE of the employees themselves. Based on the focus group, employees in low-skilled jobs did not grasp or appreciate the difference between both areas, and therefore, the first area of MAISE-NL was not included in the MAISE-Easy.

Once the questionnaire was adapted, it was sent to the human resource (HR) manager and/or supervisors of each company who were asked to comment on the input of the employees and report on items that they were missing. A focus group was also organized with team leaders and supervisors in the cleaning company because employees of this company were very low-educated and often non-Dutch. For this reason, the questionnaire was made available both in Dutch and English. The MAISE-Easy items were translated from Dutch to English by a professional translator who is an English native speaker, has a proficiency level in Dutch and experience as a researcher. The retranslation was compared with the Dutch version of the MAISE-Easy and discussed by the developers of the questionnaire (EH and IH). Both the Dutch and English versions of the MAISE-Easy are available from the authors upon request. To summarize, the hypothesized version of the MAISE-Easy includes four areas: (1) level of SE (which measures the SE level of employees), (2) factors affecting SE, (3) overall responsibility for SE and (4) responsibility for factors affecting SE.

Level of SE (Area 1) includes five scales. SE is measured by means of two scales from the MAISE-NL: health (3 items) and productivity (6 items). Based on the focus group, three scales were added on the indication of the employees: job control (5 items) and social work climate (4 items), which were measured through items developed by the researchers, and the self-efficacy scale (5 items), which was based on the scale "effort" from the general self-efficacy scale (GSES-12).[13] The wording of the latest scale items was adjusted. The response scale of Area 1 was modified from a 5-point Likert scale (1 = Strongly agree, 5 = Strongly disagree) to a 5-point frequency Likert scale (1 = Never, 5 = Always). Employees reported these scales as relevant to their SE and being in line with the SE component valuable work deduced from the definition of Van der Klink et al..[2,3]

Factors affecting SE (Area 2) includes five scales. Employees were asked which factors (e.g., more support from my manager) might be helpful (or not) to stay healthy at work and to become more sustainably employable. Three of these scales were taken from the MAISE-NL but slightly adapted; one item on clarity and one item on freedom were added to the work organization scale (9 items). The wording of the adapted work possibilities scale (4 items) was adjusted. The original lifestyle and work–life balance scales were combined into the health and lifestyle scale (9 items) in which one item on physical movement and five items on lifestyle were added based on employees' request. Two new self-developed scales, social support (3 items) and communication and collaboration (5 items), were added based on the researcher's interest and the focus group input. Lastly, the response scale was adapted from a 5-point Likert scale (1 = Nothing, 5 = A lot) to a 3-point scale (1 = It is fine as it is, 2 = will not help me much, 3 = will help me a lot).

Responsibility for SE (Area 3) includes one scale of one item: "With whom does the responsibility for sustainable employability lie according to you?". Only the wording of this scale was adapted to "who should take responsibility for being healthy at work?". The response scale ranged from 1 = Only my company to 5 = Only me.

Responsibility for factors affecting SE (Area 4) includes five scales. In total, 17 items from the original scales of the MAISE-NL were kept, and 13 new items were added. These new items measured the responsibility for the factors that were added to Area 2 of the MAISE-Easy—*Factors affecting SE*. The 5-point response scale remained the same as in the MAISE-NL (1 = Only my company, 5 = Only me).

In sum, the development process resulted in a final hypothesized set of items organized into four areas including 16 scales (see Figure 4.1). All items were measured from the employee's perspective and were well aligned with the four SE core components based on the definition of Van der Klink.[2,3] The core components of health and productivity are reflected in the "health" and "productivity" scale in Area 1 (level of SE). The core

component of valuable work is reflected in the scales of social work climate, job control and self-efficacy. The core component of long-term perspective is not explicitly included in the MAISE-Easy as a scale but is implicit in one item in the productivity scale ("I have the feeling that I will be able to carry on with my job until I retire").

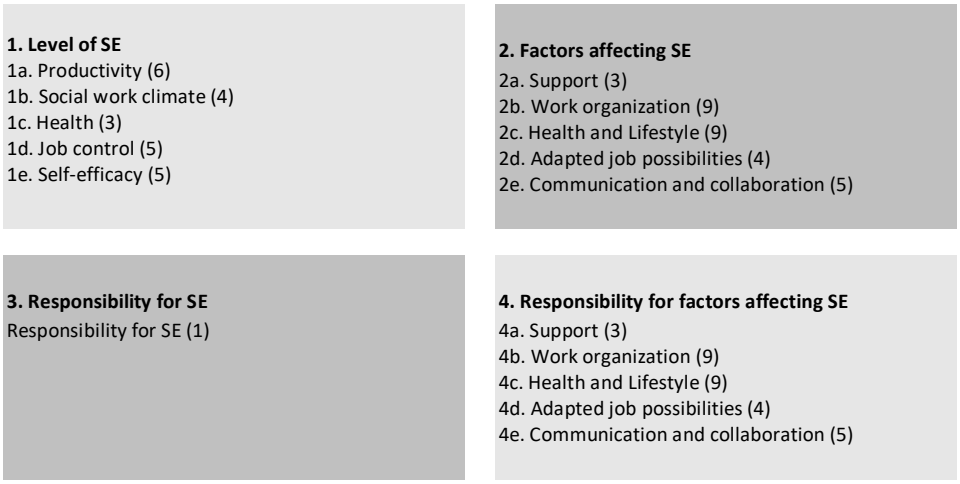

Figure 4.1 Areas, scales and number of items per scale of the MAastricht Instrument of Sustainable Employability (MAISE-NL) adapted for employees in low-skilled jobs (MAISE-Easy).

Population, design and procedure

The MAISE-Easy was tested in a sample of employees who varied in gender, age and educational level. Although educational levels varied from no education to university level, all employees performed low-skilled jobs[14], and 92% of the employees in our sample had a secondary vocational education or lower. Data were collected between May and October 2019. The employees' participation in the study was voluntary. The sample included employees from five Dutch organizations: a financial company, a cleaning company, a logistic company, a food processing company and an industrial company. The low-skilled jobs in the cleaning, logistic, food processing and industrial companies mainly consisted of physically demanding work (e.g., carrying heavy loads, standing), while the low-skilled jobs in the financial company consisted of relatively simple administrative tasks (deskwork). A total of 64% of employees fully completed the questionnaire in the industrial company, 54% in the cleaning company, 53% in the financial company, 32% in the logistic company and 12% in the food processing company. The average response rate of employees in all organizations was 53%. Table 4.1 provides an overview of the demographic characteristics for the total sample and the five organizations separately.

Table 4.1 Sample characteristics: number of employees, age (mean and %), gender (%) and educational level (%).

Variable	Total	Company				
		Financial	Cleaning	Logistic	Food	Industrial
N (range)	1054–1084	118–120	118–132	11	46	761–775
Age (mean)	43.3	52.9	41.0	35.8	49.7	41.9
≤45 (%)	48.3	19.5	62.7	72.7	17.4	51.8
>45 (%)	51.7	80.5	37.3	27.3	82.6	48.2
Gender (%)						
- men		38.3	22.0	72.7	87.0	87.2
- women	26.3	61.7	78.0	27.3	13.0	12.8
Educational level (%)						
- PS/Did not finish school	9.0	0.0	21.2	9.1	0.0	9.1
- LSE, SSE, SVE 1, SVE 2	51.4	51.3	62.7	63.6	82.6	47.6
- SVE 3–4	31.6	33.6	8.5	9.1	13.0	36.3
- HPE, University	8.1	15.1	7.6	18.2	4.3	7.1

Note. PS = Primary School, LSE = Lower Secondary Education, SSE = Senior Secondary Education, SVE = Secondary Vocational Education, HPE = Higher Professional Education.

Measures

In addition to the MAISE-Easy items described above, items on gender, age, educational level, vitality and work engagement (i.e., for testing criterion validity) were included in the questionnaire.

Vitality was measured by means of the scale vitality of the Dutch version of the Utrecht Work Engagement Scale (UWES) (5 items).[15] Work engagement was measured by means of the shortened Dutch version of the Utrecht Work Engagement Scale (UWES-3). The UWES-3 includes all three dimensions of work engagement (vigor, dedication, absorption). This short version of UWES-9 is proven to be reliable and valid.[16] The vocabulary of the UWES items was checked for comprehensibility and appeared to be understandable. The response scale ranged from 1 “Never” to 7 “Always/Everyday”.

Data analysis

The original MAISE-NL was used as the starting point for the development of the MAISE-Easy, but in the development process, major adaptations were made. In addition, the MAISE-Easy was specifically developed for employees in low-skilled jobs and hence had a different target group than the MAISE-NL. We consider the MAISE-Easy a new instrument, and therefore, we decided to take an integral approach to analyzing the psychometric properties of the MAISE-Easy; we first performed an exploratory factor analysis, and in the second step, we performed a confirmatory factor analysis.[17]

To investigate the validity and reliability of the MAISE-Easy, several statistical analyses were performed using IBM SPSS Statistics version 26 (IBM Corp., Armonk, NY, USA). First, an exploratory factor analysis was performed employing a principal component analysis (PCA) with oblimin rotation to investigate constructs' validity of the MAISE-Easy. All components extracted had an eigenvalue >1. The items that had factor loadings higher than 0.30 or lower than −0.30 on the same factor were considered highly related to each other.

Second, a confirmatory factor analysis (CFA) was performed to further validate the MAISE-Easy areas and scales. CFA was conducted by means of JAMOVI version 0.9.5.12.[18] JAMOVI uses the maximum likelihood estimation method, which is scale invariant. We constructed the models based on the PCA results. The exact fit of the model was assessed with the Chi-square index. Because of the high sensitivity of the Chi-square index to sample size[19], we used several comparative and parsimonious fit indices[20]: the root mean square error of approximation (RMSEA, which should be lower than 0.08); the comparative fit index (CFI) and the Tucker–Lewis index (TLI, also known as the non-normed fit index, which should both be 0.90 or higher); and the standardized root mean square residual (SRMR, which should be lower than 0.08). For some scales, we allowed residual errors of some items to correlate.

Third, the reliability (internal consistency) of the MAISE-Easy was analyzed by means of Cronbach's alpha calculations. The following categories were used: moderate (alpha ≤0.70), adequate to good (alpha ≥0.70 and ≤0.80) and good (alpha ≥0.80).

Fourth, Pearson correlation coefficients were performed to examine the criterion validity of the MAISE-Easy scales of Area 1, 3 and 4 by comparison with the criteria vitality and work engagement with the MAISE-Easy scales. With regard to the predictors of gender, age and educational level, one-way ANOVAs were performed.

Results

Construct validity and reliability

Level of SE

Tables 4.2 and 4.3 show the results of the PCA (construct validity) and reliability analyses of the MAISE-Easy items of Area 1– *Level of SE*.

Table 4.2 PCA MAISE-Easy Area 1— Level of SE (productivity, social work climate, health, job control), oblimin rotation.

		How do you feel about your job?			
#	Item	Productivity	Climate	Health	Control
1	I have the knowledge to be able to do my job well	**0.807**	−0.075	−0.079	−0.017
3	I do my job efficiently	**0.862**	−0.009	−0.082	−0.076
4	I have the feeling that the job I do is useful	**0.598**	0.165	0.110	0.099
5	I have the feeling that I will be able to carry on with my job until I retire	**0.324**	0.081	0.454	0.208
6	I am productive when I am working	**0.765**	0.014	0.007	−0.010
	Cronbach's alpha scale 1a productivity	0.742			
7	I feel safe and secure when I am at work	0.208	**0.595**	0.161	−0.038
8	I get help and support at work	−0.061	**0.822**	−0.012	−0.026
9	I am treated with respect at work	−0.018	**0.825**	0.073	−0.030
10	I feel appreciated/get compliments at work	0.009	**0.722**	−0.114	0.187
	Cronbach's alpha scale 1b social work climate		0.794		
2	I enjoy my job	0.357	0.312	**0.329**	0.148
11	I can work safely (temperature, light, safe surroundings, protective equipment)	0.137	0.459	**0.198**	0.016
12	I get physical complaints (pain) due to my job (R)	−0.044	−0.051	**0.819**	0.076
13	My job is stressful (R)	−0.090	0.137	**0.693**	−0.138
	Cronbach's alpha scale 1c health			0.624	
14	I have a say in what happens at work	0.037	0.155	−0.137	**0.762**
15	I can decide the type of work I do	0.032	0.077	−0.056	**0.821**
16	I have seen my ideas put into practice in my workplace	−0.049	0.240	−0.107	**0.678**
17	I can decide how to organize my work	0.012	−0.170	0.148	**0.800**
18	I can take a break when I think it is necessary	−0.040	−0.076	0.053	**0.649**
	Cronbach's alpha scale 1d job control				0.813

Note. Climate = Social work climate, Control = Job control, (R) = recoded items. The bold numbers indicate the chosen scale for each item.

Level of SE consists of five scales: (1a) productivity (six items), (1b) social work climate (four items), (1c) health (three items), (1d) job control (five items) and (1e) self-efficacy (five items).

A PCA was performed for the scales of productivity, social work climate, health and job control (see Table 4.2). Four factors with eigenvalue >1 (5.70, 2.31, 1.57 and 1.07) were drawn, explaining 59.14% of the total variance. The item "I enjoy my job" loaded high on productivity but was moved to the health scale because this item can be related to mental health. The item "I have the feeling I will be able to carry on with my job until I retire" scored high on productivity but the highest on the health factor. As this item is more related to being productive than being healthy, we decided to keep this item in the productivity scale. Finally, it was decided to keep the item "I can work safely (temperature, light, safe surroundings, protective equipment)" in the health scale despite a high score on social work climate, as it relates more clearly to the physical health and environment of employees. This four-factor structure was clearly confirmed in the CFA (see Table 4.4). We allowed four error terms to correlate in the CFA (two within the productivity scale and two within the health scale). Cronbach's alphas of

scales 1a, 1b and 1e were adequate to good. Cronbach's alpha of scale 1c was moderate, while it was good for scale 1d. Based on the PCA and for content reasons, scale 1c was kept as such despite a moderate Cronbach's alpha.

A separate PCA was performed for the self-efficacy scale (see Table 4.3), as it is an existing validated scale, and only minor wording changes were made. As expected, one factor with eigenvalue >1 (2.63) was drawn, explaining 52.60% of the total variance. The CFA clearly confirmed this structure (See Table 4.4). One error term was allowed to correlate.

Table 4.3 Principal component analysis (PCA), MAISE-Easy Area 1— Level of SE (self-efficacy).

	How do you feel about your job?	
#	**Item**	**Self-Efficacy**
19	When I have something unpleasant to do, I stick to it until I finish it	**0.620**
20	When I decide to do something, I go right to work on it	**0.721**
21	If I can't do a job the first time, I keep trying until I can	**0.815**
22	Failure just makes me try harder	**0.728**
23	When I make plans, I am certain I can make them work	**0.730**
	Cronbach's alpha scale 1e self-efficacy	0.766

Note. The bold numbers indicate the chosen scale for each item.

Table 4.4 Fit indices of the MAISE-Easy areas.

		Chi-2 (df)	**CFI**	**TLI**	**SRMR**	**RMSEA**
1	Level of SE (four factors)	665 (141) **	0.925	0.909	0.071	0.058
1	Level of SE (self-efficacy)	33.7 (4) **	0.978	0.946	0.023	0.083
4	Responsibility for factors affecting SE (six factors)	2276 (377) **	0.866	0.846	0.068	0.069
4	Responsibility for factors affecting SE (six factors, without item #13)	1902 (354) **	0.887	0.871	0.053	0.064

Note. CFI = Comparative Fit Index; TLI = Tucker–Lewis Index; SRMR = Standardized Root Mean Square Residual; RMSEA = Root Mean Square Error of Approximation.

Factors affecting SE, responsibility for SE and responsibility for factors affecting SE

Area 2—*Factors affecting SE*—was measured using a categorical response scale. Therefore, a PCA could not be performed for this area. This area can be considered on the item level, and the items are categorized based on content but should not be averaged (See Appendix 4A).

Area 3—*Responsibility for SE*—was measured using only one item; therefore, the factor structure was not tested.

Table 4.5 shows the results of the PCA and reliability analyses of the MAISE-Easy items of Area 4—*Responsibility for factors affecting SE*. Five factors with eigenvalue >1 (9.24, 3.33, 1.78, 1.42 and 1.29) were drawn, explaining 56.84% of the total variance. Based

on the PCA, several adjustments were made to the scales. Scale 4a (support) was removed. Item 2 scored highest on collaboration and was therefore moved to this new scale for content reasons. Items 1 and 3 were moved under a newly created scale: job atmosphere. Most items of scale 4b (work organization) scored highest on work organization and remained in the scale. However, items 4 and 5, initially expected to score high on work organization, scored highest on job atmosphere. Because the content matched with the new scale, the items were moved to the job atmosphere scale. In scale 4c (health and lifestyle), all items scored highest on the same factor, except for item 21 and 13, which scored highest on job atmosphere. Based on the content, item 21 was moved to the job atmosphere scale. However, item 13 was kept in the health and lifestyle scale due to content reasons. No adjustments were made to adapted job possibilities (scale 4d). Scale 4e (communication and collaboration) was split into two new scales: collaboration and communication. The new collaboration scale included collaboration items of the initial scale. The new communication scale included the communication items of the initial scale. Communication and adapted job possibilities (scale 4d) items both scored highest on the same factor. Given the content of the items, the scales could not be combined. Therefore, six scales were kept in this section, despite the five PCA components.

The CFA showed that a six-factor structure had better fit indices than the five-factor structure. The CFA also showed the fit of this area of the MAISE-Easy improved when item 13, “More variety in physical movements during the day”, was deleted (see Table 4.4). Although fit indices CFI and TLI were slightly below the threshold levels, both six-factor structures were generally confirmed in the CFA (see Table 4.4). We allowed eight error terms to correlate in both solutions.

Cronbach’s alpha was moderate for scale 4a, while it was adequate to good for scales 4d, 4e and 4f. For scales 4b and 4c, it was good. Based on the PCA and CFA, the MAISE-Easy resulted in a set of items organized into four areas, including 17 scales. All items are measured from the employee’s perspective. Figure 4.2 provides an overview of the areas, scales and number of items per scale of the MAISE-Easy after adaptations based on the PCA analyses.

Table 4.5 PCA MAISE-Easy Area 4—Responsibility for factors affecting SE, oblimin rotation.

	Who do you think should be responsible for the changes mentioned below?					
#	Item	Job atmosphere	Work organization	Health and lifestyle	Adapted job possibilities/ communication	Collaboration
1	Getting more support from my direct manager	**0.528**	0.101	0.001	−0.057	0.284
3	Getting complimented at work more often than I do now	**0.582**	0.179	−0.029	0.034	0.041
4	Improving the atmosphere within my department/shift/team (respect, openness, motivation)	**0.556**	0.116	0.055	0.128	0.271
5	Improving the working conditions (noise, temperature, protective equipment)	**0.589**	0.68	−0.007	−0.234	−0.199
21	Less pressure at work	**0.462**	−0.043	0.258	−0.333	−0.082
	Cronbach's alpha scale 4a job atmosphere	0.691				
6	Getting opportunities to learn new things/tasks	0.321	**0.450**	0.027	−0.048	−0.026
7	Getting more variation in the type of work I do	0.107	**0.720**	−0.026	−0.066	0.002
8	Getting more challenges in the type of work I do	0.065	**0.821**	0.004	0.028	−0.035
9	Using my knowledge/skills at my place of work better	−0.052	**0.816**	0.091	0.080	0.061
10	To be given more responsibility at my place of work	−0.085	**0.838**	0.057	0.040	0.049
11	To be given more freedom in how I do my job	0.028	**0.727**	−0.017	−0.119	0.013
12	Getting more clarity about my task/work	0.196	**0.508**	−0.020	−0.204	−0.035
	Cronbach's alpha scale 4b work organization		0.883			
13	More variety in physical movements during the day (lifting, bending, repetitive movement)	0.371	0.153	**0.295**	−0.144	−0.052
14	More time to take exercise	−0.084	0.143	**0.697**	−0.100	−0.077
15	Reach a healthy weight	−0.215	0.099	**0.763**	0.093	0.094
16	Eating healthily at work	0.053	0.041	**0.671**	−0.026	−0.043
17	Getting enough rest after work	0.015	−0.034	**0.837**	0.027	0.004
18	Improving how I sleep	−0.010	−0.066	**0.829**	0.029	0.065
19	A better balance between my work and private life	0.074	−0.044	**0.740**	−0.072	0.015
20	Learning to manage stress better	0.122	−0.054	**0.655**	0.028	0.084
	Cronbach's alpha scale 4c health and lifestyle			0.864		
22	Introduce more flexibility into my working hours/schedule	0.068	0.052	0.126	**−0.707**	−0.139
23	More attention to career development	0.052	0.299	0.035	**−0.531**	0.024
24	Working fewer hours per week	−0.098	−0.008	0.145	**−0.714**	−0.013

Table 4.5 (continued)

#	Item	Job atmosphere	Work organization	Health and lifestyle	Adapted job possibilities/ pommunication	Collaboration
25	Changing my tasks/job	−0.052	0.329	−0.068	**−0.572**	0.116
	Cronbach's alpha scale 4d adapted job possibilities				0.791	
26	Having more say in things that I am concerned with at work	−0.091	0.300	−0.053	**−0.499**	0.267
27	Better communication about the day-to-day running of the company	0.228	0.015	−0.087	**−0.634**	0.081
28	More clarity about who I should speak to if I have problems	0.180	−0.071	−0.024	**−0.534**	0.312
	Cronbach's alpha scale 4e communication				0.719	
2	Getting more support from my direct colleagues	0.288	0.096	0.057	0.233	**0.601**
29	Better cooperation/interaction with my colleagues	−0.144	0.073	0.109	−0.106	**0.804**
30	Better cooperation/interaction with my direct manager	0.009	−0.009	0.111	−0.277	**0.720**
	Cronbach's alpha scale 4f collaboration					0.729

Note. The bold numbers indicate the chosen scale for each item.

1. Level of SE
1a. Productivity (5)
1b. Social work climate (5)
1c. Health (4)
1d. Job control (5)
1e. Self-efficacy (5)

2. Factors affecting SE
2a. Communication, support and collaboration (7)
2b. Work organization (8)
2c. Lifestyle (3)
2d. Rest and balance (7)
2e. Future (5)

3. Responsibility for SE
Responsibility for SE (1)

4. Responsibility for factors affecting SE
4a. Job atmosphere (5)
4b. Work organization (7)
4c. Health and Lifestyle (8)
4d. Adapted job possibilities (4)
4e. Communication (3)
4f. Collaboration (3)

Figure 4.2 Areas, scales and number of items per scale of the MAISE-Easy after adaptations based on PCA.

Criterion validity

In this section, we focused on the criterion validity of MAISE Area 1 only. We examined the correlations of all subscales of level of SE (Area 1) with the criteria vitality and work engagement, and we performed one-way ANOVAs of the level 1 subscales with gender, age and educational level.

Table 4.6 shows the Pearson correlation coefficients of the MAISE-Easy scales. For Area 1, as hypothesized *(Hypothesis 2a)*, scales 1a, 1b, 1c and 1e, especially 1a (productivity) and 1c (health), were moderately to highly associated with both criteria of vitality and work engagement, hereby confirming criterion validity of the MAISE-Easy.

Table 4.7 shows the means, standard deviations and ANOVAs of the subscales of MAISE-Easy in the total sample and the means, ranges and standard deviations for gender, age and educational level. For *Factors affecting SE* (Area 2), we did not report the mean scores per scale, as the response categories were categorical. For the scores on item level based on the chi-square test, see Table 4.A1 in Appendix A. With regard to gender, we only found significant mean difference for the self-efficacy; women reported having slightly more self-efficacy than men. With regard to age, we found a significant mean difference for productivity; older employees (>45 years) reported feeling slightly more productive than younger employees, the mean difference being limited though. With regard to the education level, we found significant differences for social work climate and job control between educational levels. For social work climate, the lower the educational level, the most frequently good social work climate was reported. Employees with the lowest educational level (primary school) reported higher job control compared to the higher-educated employees, who reported having low job control. *Hypothesis 2b* was partially confirmed.

Table 4.6 Pearson correlations of MAISE-Easy scales and items (N ranges from 1033 to 1076).

#	Variable [a]	1a	1b	1c	1d	1e	3	4a	4b	4c	4d	4e	4f	5
	MAISE-EASY Scales													
1a	Productivity	-												
1b	Social work climate	0.51 **	-											
1c	Health	0.54 **	0.60 **	-										
1d	Job control	0.28 **	0.38 **	0.24 **	-									
1e	Self-efficacy	0.42 **	0.27 **	0.23 **	0.14 **	-								
3	Overall responsibility for SE	0.13 **	0.15 **	0.22 **	0.09 **	0.07 *	-							
4a	Atm.-res	0.19 **	0.35 **	0.32 **	0.29 **	0.04	0.29 **	-						
4b	Org.-res	0.26 **	0.32 **	0.24 **	0.34 **	0.10 **	0.21 **	0.61 **	-					
4c	H and L-res	0.18 **	0.26 **	0.28 **	0.12 **	0.11 **	0.21 **	0.37 **	0.35 **	-				
4d	Adap.res	0.20 **	0.22 **	0.17 **	0.29 **	0.02	0.17 **	0.52 **	0.59 **	0.37 **	-			
4e	Com.-res	0.18 **	0.28 **	0.17 **	0.28 **	0.03	0.19 **	0.54 **	0.57 **	0.29 **	0.65 **	-		
4f	Coll.-res	0.13 **	0.25 **	0.16 **	0.14 **	0.13 **	0.22 **	0.41 **	0.45 **	0.37 **	0.33 **	0.43 **	-	
5	*Criteria*													
	Vitality	0.49 **	0.39 **	0.46 **	0.23 **	0.40 **	0.20 **	0.25 **	0.25 **	0.27 **	0.21 **	0.22 **	0.18 **	-
	Work engagement	0.56 **	0.42 **	0.47 **	0.29 **	0.38 **	0.17 **	0.24 **	0.27 **	0.23 **	0.22 **	0.21 **	0.16 **	0.85 **

Note.* $p<0.05$ level, ** $p<0.01$. [a] Explanation of variable names: Com., sup., and coll. = Communication, support and collaboration, Atm.-res = Responsibility for job atmosphere, Org.-res = Responsibility for work organization, H and L-res = Responsibility for health and lifestyle, Adap.res = Responsibility for adapted job possibilities, Com.-res = Responsibility for communication, Coll.-res = Responsibility for collaboration.

Table 4.7 Means (M), standard deviations (SD) and percentiles of the MAISE-Easy scales for the total sample and subgroups (gender, age, educational level) for Areas (1) level of SE, (3) responsibility for SE, (4) responsibility for factors affecting SE and for the criteria (vitality and work engagement).

Scale/Proxies	M (Range)	SD	25th perc.	75th perc.	M (Range)	SD	M (Range)	SD	M (Range)	SD	M (Range)	SD	M (Range)	SD	M (Range)	SD	M (Range)	SD	M (Range)	SD
	Total sample (*n*=1035–1076)				Men (*n*=774–796)		Women (*n*=261–280)		≤45 (*n*=493–511)		>45 (*n*=531–552)		Primary school/ did not finish school (*n*=92–95)		LSE, SSE, SVE 1 and SVE 2 (*n*=528–540)		SVE 3–4 (*n*=329–333)		HPE and university (*n*=83–85)	
1. Level of SE																				
1a. Productivity	3.97 (1.4–5)	0.68	3.60	4.40	3.97 (1.6–5)	0.67	3.97 (1.4–5)	0.69	3.89 (1.6–5)	0.66	4.05 (1.4–5)	0.68	4.04 (1.6–5)	0.78	4.00 (1.6–5)	0.68	3.90 (1.4–5)	0.63	3.94 (2.2–5)	0.65
1b. Social work climate	3.62 (1–5)	0.82	3.00	4.25	3.61 (1–5)	0.82	3.64 (1–5)	0.85	3.59 (1–5)	0.84	3.64 (1–5)	0.81	3.93 (2–5)	0.84	3.61 (1–5)	0.83	3.57 (1–5)	0.78	3.42 (1–5)	0.86
1c. Health	3.76 (1–5)	0.71	3.25	4.25	3.76 (1–5)	0.71	3.75 (1.5–5)	0.70	3.75 (1.25–5)	0.71	3.77 (1–5)	0.70	3.90 (1.25–5)	0.86	3.75 (1.25–5)	0.70	3.73 (1.25–5)	0.62	3.74 (1–5)	0.77
1d. Job control	2.58 (1–5)	0.89	1.80	3.20	2.56 (1–5)	0.87	2.62 (1–5)	0.92	2.54 (1–5)	0.91	2.61 (1–5)	0.87	2.75 (1–5)	0.95	2.51 (1–5)	0.87	2.65 (1–5)	0.88	2.55 (1–5)	0.95
1e. Self-efficacy	4.07 (1–5)	0.71	3.60	4.60	4.04 (1–5)	0.71	4.17 (1.8–5)	0.70	4.08 (1.2–5)	0.68	4.06 (1–5)	0.73	3.95 (1–5)	0.89	4.10 (1.4–5)	0.70	4.10 (1.2–5)	0.64	4.02 (2–5)	0.73
3. Responsibility for SE																				
	2.83 (1–5)	0.64	3.00	3.00	2.81 (1–5)	0.64	2.91 (1–5)	0.62	2.83 (1–5)	0.69	2.83 (1–5)	0.59	2.88 (1–5)	0.96	2.83 (1–5)	0.58	2.81 (1–5)	0.62	2.88 (1–5)	0.62
4. Responsibility for factors affecting SE																				
4a. Job atmosphere	2.43 (1–5)	0.61	2.00	2.80	2.40 (1–5)	0.61	2.50 (1–5)	0.62	2.39 (1–5)	0.64	2.47 (1–5)	0.59	2.62 (1–5)	0.77	2.46 (1–5)	0.63	2.33 (1–4.2)	0.54	2.34 (1–3.6)	0.57
4b. Work organization	2.67 (1–5)	0.72	2.29	3.00	2.64 (1–5)	0.70	2.74 (1–5)	0.77	2.54 (1–5)	0.70	2.78 (1–5)	0.73	2.82 (1–5)	0.85	2.72 (1–5)	0.73	2.56 (1–5)	0.66	2.54 (1–4.14)	0.69
4c. Health and lifestyle	3.74 (1–5)	0.72	3.25	4.25	3.66 (1–5)	0.73	3.95 (1–5)	0.66	3.67 (1–5)	0.75	3.80 (1–5)	0.69	3.94 (1–5)	0.73	3.79 (1–5)	0.70	3.59 (1–5)	0.73	3.68 (1.5–5)	0.72
4d. Adapted job possibilities	2.50 (1–5)	0.81	2.00	3.00	2.41 (1–5)	0.77	2.77 (1–5)	0.85	2.35 (1–5)	0.80	2.63 (1–5)	0.79	2.74 (1–5)	0.82	2.59 (1–5)	0.82	2.32 (1–4.5)	0.75	2.36 (1–4)	0.72

Table 4.7 (continued)

Scale/Proxies	M (Range)	SD	25th perc.	75th perc.	M (Range)	SD	M (Range)	SD	M (Range)	SD	M (Range)	SD	M (Range)	SD	M (Range)	SD	M (Range)	SD	M (Range)	SD
	Total sample (*n*=1035–1076)				Men (*n*=774–796)		Women (*n*=261–280)		≤45 (*n*=493–511)		>45 (*n*=531–552)		Primary school/ did not finish school (*n*=92–95)		LSE, SSE, SVE 1 and SVE 2 (*n*=528–540)		SVE 3–4 (*n*=329–333)		HPE and university (*n*=83–85)	
4e. Communication	2.39 (1–5)	0.72	2.00	3.00	2.35 (1–5)	0.69	2.51 (1–5)	0.79	2.33 (1–5)	0.75	2.45 (1–5)	0.69	2.60 (1–5)	0.79	2.46 (1–5)	0.75	2.24 (1–5)	0.64	2.29 (1–3.33)	0.60
4f. Collaboration	3.07 (1–5)	0.73	2.67	3.67	3.05 (1–5)	0.74	3.13 (1–5)	0.69	3.05 (1–5)	0.69	3.09 (1–5)	0.76	3.21 (1–5)	0.80	3.11 (1–5)	0.75	3.02 (1–5)	0.67	2.91 (1–4.33)	0.63
Vitality and work engagement																				
Vitality	5.14 (1–7)	1.27	4.20	6.00	5.14 (1–7)	1.29	5.13 (1.6–7)	1.22	5.05 (1–7)	1.21	5.21 (1–7)	1.33	5.19 (1–7)	1.42	5.20 (1–7)	1.27	5.07 (1–7)	1.23	5.00 (2–7)	1.21
Work engagement	5.17 (1–7)	1.40	4.33	6.33	5.16 (1–7)	1.43	5.20 (1.33–7)	1.32	5.09 (1–7)	1.34	5.24 (1–7)	1.47	5.31 (1–7)	1.50	5.24 (1–7)	1.38	5.08 (1–7)	1.40	4.89 (1–7)	1.48

Note. LSE = Lower Secondary Education, SSE = Senior Secondary Education, SVE = Secondary Vocational Education, HPE = Higher Professional Education. Note. Explanation of the scale scores: Scale 1 (1 = Never, 2 = Sometimes, 3 = Regularly, 4 = Often, 5 = Always), Scales 3 and 4 (1 = Only my company, 2 = Mostly my company, 3 = Both my company and myself, 4 = Mostly me, 5 = Only me.

Discussion

This paper describes the development and validation of the MAastricht Instrument of Sustainable Employability (MAISE-NL) adapted for employees in low-skilled jobs (MAISE-Easy). The MAISE-Easy is based on the MAISE-NL and was adapted by means of focus groups conducted among employees in low-skilled jobs. The MAISE-Easy aims to measure sustainable employability (SE) from an employee's perspective and includes 17 scales divided over four areas: (1) level of SE (5 scales), (2) factors affecting SE (5 scales), (3) responsibility for SE (1 scale), (4) responsibility for factors affecting SE (6 scales). The MAISE-Easy construct validity (PCA and CFA) and reliability were good, confirming *Hypotheses 1a* and *1b*. Two scales (1c and 4a) had a somewhat lower reliability, but still acceptable, and were kept for content reasons and clear factor structure (4a). Correlational analyses showed that the criterion validity of the MAISE-Easy Area 1 (level SE) with the criteria vitality and engagement was good (*Hypothesis 2a* was confirmed). *Hypothesis 2b* was partially confirmed; only some subscales of MAISE Area 1 (level of SE) varied across the subgroups. No differences were found between men and women, except for self-efficacy, which women reported slightly more than men. With regard to age, we found older employees to report being productive slightly more than younger employees. This seems in line with our expectation that productivity increases with experience.[21,22] We found no age differences for the other aspects of level of SE. Contrary to expectations, employees with the lowest educational level (primary school) scored higher on productivity, health, social work climate and job control (but still low) as compared to their higher-educated colleagues. With regard to job control, this result may be explained as follows. Autonomy and job control in low-skilled jobs can be assumed to be low. The relatively higher-educated employees in these low-skilled jobs might be more bothered by these low levels of autonomy and consequently perceive job control to be very low.

All in all, we can conclude that the MAISE-Easy has adequate to good psychometric properties and is relevant and highly needed. Most existing questionnaires tackling work and health are developed for middle to highly educated employees rather than for employees in low-skilled jobs who often have a lower education level. Several adjustments had to be made in the MAISE-NL in order to make the questionnaire suitable for use among employees in low-skilled jobs. This indicates that the validity of the MAISE-NL in this group was limited. The MAISE-Easy may facilitate the inclusion of employees in low-skilled jobs in needs assessments and can also be used to develop and evaluate interventions, which are better aligned with the needs and circumstances of this group of employees.

The PCA showed that some further adjustments were indicated in the MAISE-Easy. This might be the result of some items still being too ambiguous for employees in low-skilled jobs or due to the variety of employees, which may have been larger than in the

focus groups. For instance, employees worked in different sectors, had different types of jobs and ethnicities. The PCA was, therefore, very valuable for further fine tuning the questionnaire to the vocabulary and work context of employees in low-skilled jobs.

Recommendations for future use of the MAISE-Easy

The MAISE-Easy will facilitate research in the field of work and health in the understudied group of employees in low-skilled jobs. The instrument will also facilitate employers in developing or selecting SE interventions tailored to the needs of the more vulnerable and underserved group of employees in low-skilled jobs. The MAISE-Easy can be used as a needs assessment to help in the development of decent and more inclusive work conditions for occupational groups that are more vulnerable to SE, such as employees in low-skilled jobs. Interventions that are better aligned to the needs of employees in low-skilled jobs will likely be more effective. The MAISE-Easy can be used as an evaluation tool after the intervention implementation as well, to evaluate whether the implemented SE intervention was effective. Based on the preferences of organizations, different work-related outcomes (such as sickness absence, presenteeism, burnout) could be added or replaced to explore more the relationship of SE with these outcomes.

Methodological reflection and future research

The study sample included employees working in different companies and sectors and varied in age, gender and educational level. The sample also included employees with higher educational levels, (e.g., university degree) because the inclusion criteria in this study related to having a low-skilled job rather than a low educational level. It shows that some higher-educated employees preferred to work in low-skilled jobs, which may be related to work pressure and too much autonomy in higher-skilled jobs. The average response rate was 53%, which can be considered relatively high given the target population and comparable with other organizational surveys. The MAISE-Easy was translated into English. However, employees who are illiterate or unable to read Dutch or English are not yet being served with this measure. For some employees in low-skilled jobs, the method of a questionnaire remains difficult. Moreover, the MAISE-Easy is a rather lengthy questionnaire. It might therefore be relevant to consider other methods to quantify employee perspectives on SE and ways to include this specific target group, for instance, using pictograms. Additionally, the response scale of Area 2 (factors affecting SE) has some limitations (1 = It is fine as it is, 2 = will not help me much, 3 = will help me a lot). The response scale was inserted based on the advice of employees in the focus groups, as they found that easier to understand. However, the response scale still turns out to be too ambiguous for the understanding of the respondents. This raised some difficulties in the analyses and interpretation of results. Future adaptations of the response scale may be helpful for future use of the MAISE-Easy as a needs assessment among employees in low-skilled jobs. Finally, the results

may be influenced by some forms of common method variance or artificial inflation of synchrony in the answers, which is inherent to all self-reported and cross-sectional data.[23] With regard to the criterion validity, we could not infer causality, and future studies with a longitudinal design are needed. Translations of the MAISE-Easy into several immigrant employees' native languages should also be considered to increase the internal and external validity (i.e., transferability).

Conclusion

The MAISE-Easy is a valid adaptation of the MAISE-NL for an underserved group of employees that is often ignored in research. Very few survey instruments have been tested regarding their feasibility for employees in low-skilled jobs and even fewer were optimally adapted. Our new instrument was adapted using both focus group sessions with the target group and robust psychometric methods. The MAISE-Easy thus appears to be a reliable and valid measurement instrument for measuring aspects of sustainable employability in employees who work in low-skilled jobs. The MAISE-Easy includes scales to evaluate the employee perspective on the level of SE, factors affecting SE, responsibility for SE, responsibility for factors affecting SE and vitality and work engagement. We recommend for researchers to use this instrument for SE studies and employers to use the MAISE-Easy as a needs assessment for developing SE interventions that will be more readily accepted and more effective for employees in low-skilled jobs.

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Appendix 4A

Table 4.A1 Chi-square subgroup analyses (gender, age, educational level) MAISE-Easy Area 2— Factors affecting SE.

#	Item		%							
	2. Factors Affecting SE		**Gender**		**Age**		**Educational Level**			
		R	Men	Women	≤45	>45	a	b	c	d
	N		799	285	517	554	95	542	333	85
	Communication, support and collaboration									
1	Getting more support from my direct manager	1	55.0	60.6	52.8	59.6	59.1	57.6	53.9	56.0
		2	14.7	10.8	13.0	14.6	8.6	13.2	15.1	14.3
		3	30.3	28.5	34.3	25.8	32.3	29.1	31.0	29.8
	χ^2 (sig.)		*3.60 (.17)*		*9.03 (.01)**			*3.37 (.76)*		
2	Getting more support from my direct colleagues	1	62.7	61.4	60.3	63.8	59.1	65.3	60.5	56.0
		2	14.0	15.9	15.7	13.5	18.3	12.1	16.6	19.0
		3	23.3	22.7	24	22.7	22.6	22.6	22.9	25.0
	χ^2 (sig.)		*.57 (.75)*		*1.57 (.46)*			*6.92 (.33)*		
3	Getting complimented at work more often than I do now	1	37.5	50.7	38.1	43.5	49.5	40.7	37.7	39.3
		2	20.7	17.0	19.9	19.6	16.1	19.3	21.7	22.6
		3	41.7	32.2	42.0	36.9	34.4	40.0	40.7	38.1
	χ^2 (sig.)		*14.77 (.00)**		*3.65 (.16)*			*4.96 (.55)*		
4	Improving the atmosphere within my department/shift/team (respect, openness, motivation)	1	49.7	52.2	47.5	52.7	61.3	52.9	42.8	47.6
		2	15.9	12.6	13.8	16.5	12.9	14.7	16.0	15.5
		3	34.4	35.3	38.7	30.9	25.8	32.4	41.3	36.9
	χ^2 (sig.)		*1.82 (.40)*		*7.28 (.03)**			*14.45 (.03)**		
28	More clarity about who I should speak to if I have problems	1	59.4	61.5	61.2	58.2	71.0	60.1	57.1	56.6
		2	10.3	9.4	9.4	10.7	3.2	11.6	9.7	10.8
		3	30.3	29.1	29.3	31.1	25.8	28.3	33.2	32.5
	χ^2 (sig.)		*.43 (.81)*		*1.08 (.58)*			*10.51 (.11)*		
29	Better cooperation/interaction with my colleagues	1	66.0	66.2	62.2	69.2	68.8	66.9	64.7	65.1
		2	9.2	6.1	9.8	7.2	5.4	8.1	9.1	10.8
		3	24.8	27.7	28.0	23.6	25.8	25.1	26.3	24.1
	χ^2 (sig.)		*2.95 (.23)*		*6.13 (.05)**			*2.31 (.89)*		
30	Better cooperation/interaction with my direct manager	1	62.0	71.2	59.6	68.5	72.0	63.7	62.2	66.3
		2	11.2	5.8	9.8	9.8	8.6	9.9	10.3	9.6
		3	26.8	23.0	30.5	21.7	19.4	26.4	27.5	24.1
	χ^2 (sig.)		*10.12 (.01)**		*11.00 (.00)**			*3.40 (.76)*		
	Work organization									
5	Improving the working conditions (noise, temperature, protective equipment)	1	39.7	38.1	40.4	37.4	55.9	39.7	32.8	38.1
		2	15.0	11.9	12.6	15.9	14.0	14.0	15.7	13.1
		3	45.4	50.0	47.0	46.7	30.1	46.3	51.5	48.8
	χ^2 (sig.)		*2.45 (.29)*		*2.66 (.27)*			*17.95 (.01)**		
7	Getting more variation in the type of work I do	1	58.2	54.7	50.2	63.3	57.1	60.1	55.9	45.8
		2	12.3	10.5	13.4	10.5	11.0	11.2	11.8	16.9
		3	29.5	34.8	36.4	26.2	31.9	28.7	32.3	37.3
	χ^2 (sig.)		*2.87 (.24)*		*18.51 (.00)**			*6.96 (.33)*		
8	Getting more challenges in the type of work I do	1	46.3	46.9	39.2	52.8	53.8	49.0	40.5	44.6
		2	14.5	14.2	12.5	16.0	15.4	15.3	12.7	12.0
		3	39.3	38.9	48.3	31.2	30.8	35.7	46.8	43.4
	χ^2 (sig.)		*.04 (.98)*		*32.26 (.00)**			*14.32 (.03)**		

Table 4A.1 (continued)

#	Item		%							
	2. Factors Affecting SE									
			Gender		**Age**		**Educational Level**			
9	Using my knowledge/skills at my place of work better	1	48.3	52.2	45.2	52.6	48.9	55.2	43.2	33.7
		2	12.2	10.5	10.1	13.2	14.1	11.6	10.9	15.7
		3	39.5	37.3	44.8	34.2	37.0	33.2	45.9	50.6
	χ^2 (sig.)		*1.37 (.51)*		*12.54 (.00)**		*23.79 (.00)**			
10	To be given more responsibility at my place of work	1	57.8	59.4	52.2	63.9	61.5	60.1	56.8	48.2
		2	11.7	12.7	11.1	13.0	9.9	12.3	11.2	14.5
		3	30.5	27.9	36.8	23.1	28.6	27.6	32.0	37.3
	χ^2 (sig.)		*.72 (.70)*		*23.43 (.00)**		*6.06 (.42)*			
11	To be given more freedom in how I do my job	1	60.4	66.5	57.8	65.4	69.2	64.1	60.4	49.4
		2	11.5	9.8	12.1	10.4	7.7	11.2	11.5	14.5
		3	28.0	23.6	30.1	24.2	23.1	24.7	28.1	36.1
	χ^2 (sig.)		*3.26 (.20)*		*6.46 (.04)**		*9.49 (.15)*			
12	Getting more clarity about my task/work	1	66.6	73.6	65.9	70.3	69.2	72.1	65.3	61.4
		2	9.6	7.6	9.1	9.3	4.4	9.1	9.4	13.3
		3	23.7	18.8	25.0	20.3	26.4	18.8	25.4	25.3
	χ^2 (sig.)		*4.68 (.10)*		*3.38 (.19)*		*11.28 (.08)*			
13	More variety in physical movements during the day	1	53.6	51.8	53.8	51.7	57.6	55.2	50.8	42.2
		2	13.9	10.8	12.8	13.6	8.7	11.2	16.0	18.1
		3	32.5	37.4	33.3	34.7	33.7	33.6	33.2	39.8
	χ^2 (sig.)		*3.05 (.22)*		*.47 (.79)*		*10.50 (.11)*			
	Lifestyle									
14	More time to take exercise	1	39.0	38.9	40.0	37.5	46.2	41.5	33.0	38.6
		2	21.2	22.9	16.6	26.7	25.8	22.4	20.9	14.5
		3	39.8	38.2	43.4	35.8	28.0	36.1	46.1	47.0
	χ^2 (sig.)		*.42 (.81)*		*16.48 (.00)**		*17.61 (.01)**			
15	Reach a healthy weight	1	56.3	56.8	57.5	55.0	57.0	58.0	55.6	54.2
		2	10.3	10.8	10.0	10.8	8.6	9.9	11.5	8.4
		3	33.4	32.4	32.5	34.1	34.4	32.1	32.9	37.3
	χ^2 (sig.)		*.12 (.94)*		*.65 (.72)*		*2.06 (.91)*			
16	Eating healthily at work	1	51.8	59.6	48.6	58.1	54.8	55.1	51.5	50.6
		2	15.2	11.6	15.6	13.2	10.8	13.7	15.8	16.9
		3	33.0	28.7	35.8	28.7	34.4	31.3	32.7	32.5
	χ^2 (sig.)		*5.34 (.07)*		*9.54 (.01)**		*2.79 (.83)*			
	Rest and balance									
17	Getting enough rest after work	1	50.1	55.8	46.0	56.3	54.8	54.7	46.4	46.3
		2	6.9	5.4	6.3	6.8	3.2	6.7	6.4	8.5
		3	43.0	38.8	47.7	36.9	41.9	38.6	47.3	45.1
	χ^2 (sig.)		*2.79 (.25)*		*12.76 (.00)**		*9.29 (.16)*			
18	Improving how I sleep	1	46.6	55.0	43.5	52.8	55.9	51.5	43.2	42.2
		2	10.2	7.2	9.1	9.9	12.9	8.6	9.4	10.8
		3	43.3	37.8	47.4	37.2	31.2	39.9	47.4	47.0
	χ^2 (sig.)		*6.42 (.04)**		*11.43 (.00)**		*12.37 (.05)*			
19	A better balance between my work and private life	1	56.7	64.0	52.8	63.2	64.5	60.2	55.0	55.4
		2	7.8	5.0	7.5	6.8	8.6	7.5	6.6	4.8
		3	35.6	30.9	39.8	30.0	26.9	32.3	38.4	39.8
	χ^2 (sig.)		*5.34 (.07)*		*12.40 (.00)**		*7.18 (.31)*			
20	Learning to manage stress better	1	53.6	60.1	54.5	55.7	60.2	54.8	52.9	57.8
		2	14.5	8.6	13.4	12.9	9.7	12.7	13.6	18.1
		3	31.9	31.3	32.1	31.4	30.1	32.5	33.5	24.1
	χ^2 (sig.)		*7.00 (.03)**		*.15 (.93)*		*5.39 (.50)*			

Table 4A.1 (continued)

#	Item		%							
	2. Factors Affecting SE									
			Gender		**Age**		**Educational Level**			
21	Less pressure at work	1	45.5	55.6	47.5	48.3	53.8	49.3	44.1	48.2
		2	13.9	9.0	13.0	12.3	9.7	10.9	14.5	18.1
		3	40.7	35.4	39.4	39.3	36.6	39.9	41.4	33.7
	χ^2 (sig.)		*9.59 (.01)**		*.14 (.93)*			*7.95 (.24)*		
22	Introduce more flexibility into my working hours/schedule	1	51.8	65.1	51.0	58.6	59.1	58.8	45.9	65.1
		2	15.5	9.0	14.4	13.4	8.6	13.7	15.4	15.7
		3	32.7	25.9	34.6	28.0	32.3	27.5	38.7	19.3
	χ^2 (sig.)		*16.01 (.00)**		*6.63 (.04)**			*22.90 (.00)**		
24	Working fewer hours per week	1	36.6	57.2	43.1	40.0	49.5	43.6	35.3	45.8
		2	21.9	19.4	23.4	19.4	19.4	22.8	17.5	26.5
		3	41.5	23.4	33.5	40.6	31.2	33.5	47.1	27.7
	χ^2 (sig.)		*39.81 (.00)**		*6.20 (.05)**			*23.06 (.00)**		
	Future									
6	Getting opportunities to learn new things/tasks	1	34.7	37.9	30.0	39.9	44.1	39.1	27.4	33.3
		2	14.6	17.0	10.1	20.1	12.9	17.8	12.0	14.3
		3	50.7	45.1	60.0	39.9	43.0	43.1	60.5	52.4
	χ^2 (sig.)		*2.65 (.27)*		*46.18 (.00)**			*28.67 (.00)**		
23	More attention to career development	1	30.3	36.7	27.8	35.2	50.5	35.3	21.5	28.9
		2	18.7	15.8	9.1	26.3	17.2	21.0	13.9	18.1
		3	51.0	47.5	63.1	38.5	32.3	43.7	64.7	53.0
	χ^2 (sig.)		*4.06 (.13)*		*79.46 (.00)**			*53.83 (.00)**		
25	Changing my tasks/job	1	45.4	57.6	41.9	54.3	63.4	52.5	38.8	43.4
		2	19.5	12.3	14.8	20.4	14.0	20.5	15.2	13.3
		3	35.1	30.1	43.3	25.2	22.6	27.0	46.1	43.4
	χ^2 (sig.)		*13.71 (.00)**		*38.19 (.00)**			*45.62 (.00)**		
26	Having more say in things that I am concerned with at work	1	42.7	50.5	39.8	49.2	57.0	46.9	39.3	38.6
		2	14.9	17.3	13.6	17.1	15.1	17.6	11.8	19.3
		3	42.4	32.1	46.5	33.7	28.0	35.5	48.9	42.2
	χ^2 (sig.)		*8.97 (.01)**		*18.06 (.00)**			*24.74 (.00)**		
27	Better communication about the day-to-day running of the company	1	25.7	41.9	30.4	28.7	50.5	32.6	18.1	32.5
		2	12.1	10.5	8.5	14.9	8.6	14.1	9.7	7.2
		3	62.2	47.7	61.1	56.4	40.9	53.3	72.2	60.2
	χ^2 (sig.)		*25.81 (.00)**		*10.46 (.01)**			*54.34 (.00)**		

Note.* $p<0.05$, R = response number, 1 = It is fine as it is, 2 = Will not help me much, 3 = Will help me a lot, Fin. = Financial Company, Clean. = Cleaning Company, Log. = Logistic Company, Food = Food Company, Ind. = Industrial Company, a = Primary school/Did not finish school, b = Lower Secondary Education, Senior Secondary Education, Secondary Vocational Education 1 and Secondary Vocational Education 2, c = Secondary Vocational Education 3–4, d = Higher Professional Education and University.

CHAPTER 5

Does dialogue improve the sustainable employability of low-educated employees? A study protocol for an effect and process evaluation of 'Healthy HR'

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Abstract

Background

There is a need to develop sustainable employability (SE) interventions that are better aligned to the needs of low-educated employees. This group needs to get a voice in intervention development and implementation. In this study, a dialogue-based approach is proposed consisting of an online step-by-step support toolkit for employers, 'Healthy Human Resources' (HHR). When intervening, this toolkit enables and stimulates employers to have a continuous dialogue with their low-educated employees. By improving the employees' job control, HHR is aimed at cost-beneficially improving SE. This paper describes the protocol of the evaluation study to evaluate the effectiveness and implementation process of HHR on the SE of low-educated employees.

Methods

The protocol of the evaluation study consists of: 1) an effect evaluation with a pretest-posttest design with a one-year follow-up in five work organizations in the Netherlands deploying low-educated employees and with SE as the primary outcome and job control as the secondary outcome. The effect evaluation is expanded with a budget impact analysis; 2) a mixed-method process evaluation at six and twelve months after the start of HHR to evaluate the whole implementation process of HHR. This includes the experiences with HHR of various stakeholders, such as employees, human resource managers, and line managers.

Discussion

The effect evaluation will give insight into the effects of HHR on the SE of low-educated employees. The process evaluation will provide insight into the underlying mechanisms of the (in) effectiveness of HHR. By improving dialogue, we hypothesize that HHR, through enhancing job control, will strengthen the SE of low-educated employees. Also for helping with tackling the socioeconomic health gap, if proven effective, the implementation of HHR on a wider scale can be recommended.

Introduction

Despite many attempts to reduce socioeconomic health differences, such differences remain large and persistent.[1,2] As, in the work domain, low-educated employees much more often prematurely leave the labor force due to health-related problems than their higher-educated counterparts[2-4], it is worrying that lower-educated employees are often difficult to reach in research and intervention efforts aimed at improving their situation.[5,6] Through absenteeism, presenteeism, and high staff turnover, this has substantial financial implications for employers too.[7] Low-educated employees constitute a group that needs extra effort in this regard. Employees' sustainable employability (SE) has become top priority for employers, as they aim to foster employees' health and productivity in a sustainable way.[8] The concept of SE is not one individual aspect, but rather an interaction between the employee and the organizational context. The workplace therefore is a good starting point to reach low-educated employees and improve their SE.[8-10] This group, however, hardly participates in workplace health interventions[9,11], and, when they do participate, they tend to benefit to a lesser extent.[12] In practice, many SE interventions are being developed without taking the perspective of the target group into account. Employers tend to buy ready-made health programs from (commercial) third parties, in which implementation takes place via a non-participatory top-down approach.[13] Employees are often passive receivers in these programs.[14,15] Consequently, a mismatch occurs between these health programs and the needs and the world of daily experience of most low-educated employees. Therefore, low-educated employees need a different and more intensive approach than their higher-educated counterparts.[16]

There is thus an urgent need to better align SE interventions to the needs of low-educated employees. To increase the effectiveness of these interventions, this group needs to have a say and needs to be actively involved in intervention development and implementation.[6,17,18] Active involvement and participation in decision-making processes is expected to empower employees by increasing job control and autonomy; these in turn are expected to improve the employees' (mental) health and SE.[19-21] Job control is an important determinant of employee wellbeing, particularly for low-educated employees who generally work in low control situations.[20,22,23] When intervening, we expect that a profound dialogue between employees and the employer is crucial in increasing job control and SE among low-educated employees.[24-26] Dialogue stands for an explanatory way of having a conversation in which all involved stakeholders experience a shared responsibility for the outcome of the dialogue.[27] Instead of one-sided monologues or directives from the top, during dialogue, employees and representatives of the employer can think together and share experiences from different perspectives.[25] When employers engage employees in dialogue, employees feel that their opinions count and that they are given a voice.[28,29] Previous studies found positive effects of improved work conditions through dialogue

groups among high-educated physicians[28] and feeling heard and valued has been found to increase the self-esteem and self-efficacy of employees.[19]

We propose a dialogue-based approach to stimulate active employee participation in the development and implementation of tailored SE interventions. We assume that this will contribute to a higher job control and SE of low-educated employees. Due to the participatory approach, including the dialogue component, employees get the opportunity to obtain more self-direction, experience more job control, which eventually will improve their health and SE. By lowering sickness absence, our approach will also be cost-beneficial for employers.[7] We have therefore developed a free online support toolkit named - Healthy Human Resources' (HHR) aimed at improving SE of the low-educated employees. With the toolkit, employers (e.g., HR managers; supervisors), in dialogue with the low-educated employees, can develop and implement tailored SE interventions. As long as these are the outcome of a shared dialogue, the tailored SE interventions can vary widely regarding size and content and may, for example, include compliments cards, job crafting, lifestyle interventions, or leadership training. The online toolkit HHR has already been developed, also in dialogue with several stakeholders, such as HR-managers, supervisors, and low-educated employees.

This paper presents the study protocol of the evaluation study, evaluating the effect and the process of HHR. Particularly through increasing the low-educated employees' control at work, we hypothesize that the use of HHR in organizations, by integrating a dialogue-based approach, improves the SE of low-educated employees. We therefore also expect that employees who are more exposed to the dialogue integrated within HHR will experience more improvement in SE than employees who are less or not at all exposed to HHR (dose-response). The conceptual model of HHR is illustrated in Figure 5.1.

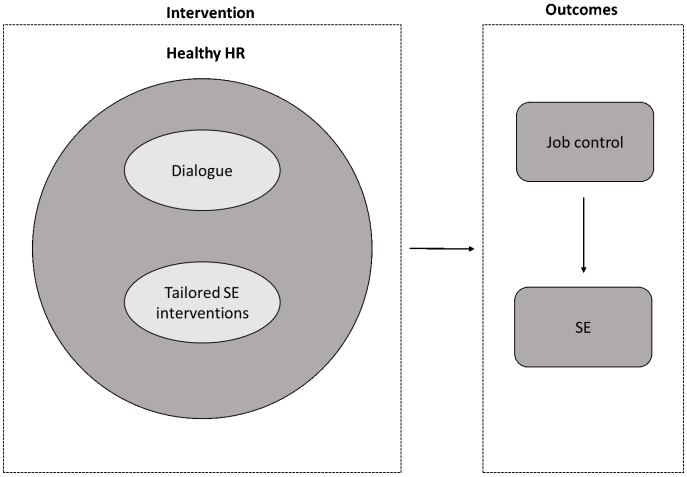

Figure 5.1 Conceptual model of HHR and expected outcomes.

Methods

The evaluation framework consists of a quantitative effect evaluation and an extensive mixed-method process evaluation. The aim of the effect evaluation is to investigate the effect of HHR on the SE of low-educated employees. The aim of the process evaluation is to assess the implementation process, the underlying mechanisms of the HHR's effectiveness or lack thereof (the how, what, why), and the HHR experiences of key stakeholders, such as the employees, HR manager and supervisors. The effect and process evaluation supplement each other.

Intervention: Healthy HR

HHR is a web-based step-by-step support toolkit for HR managers and/or supervisors aimed at improving SE of low-educated employees. It supports HR managers and supervisors by developing and implementing their own tailored SE interventions by – from the start – involving their low-educated employees via dialogue. This online toolkit is presented on the 'Healthy Human Resources' website (www.gezondhr.nl) (in Dutch). It consists of different steps, tasks, and dialogue-based tools for use within a team or department of the participating organizations. Within HHR eight steps are presented: step 1) Prepare together; step 2) Measuring is knowing; step 3) Our problems; step 4) Our solutions; step 5) Action plan; step 6) Let's start; step 7) Evaluation, and step 8) Along the way: obstacles in the process. Each step, is represented by several underlying tasks (e.g., brainstorming; prioritizing; communicating) and every task contains one or more supportive tools. Tools can be questionnaires, working forms, checklists, communication tips and information, external links, or a library with simple solutions and evidence-based interventions. Every task and tool facilitates a certain degree of employee participation and dialogue. The main outline of the steps, tasks and tools are presented in Appendix 5A. Organizations can select the tools which best fit to their context and their employees' situation, thereby developing a tailor-made toolkit for the needs assessment (HHR step 1-4) and developing and implementing their own tailored SE interventions (HHR step 5-7). The development of HHR is based on the Intervention Mapping approach (IM).[30] As IM is a rather detailed and time-consuming approach[30,31], we decided to use an adapted version of the IM within HHR as well; this will make HHR more feasible for employers to put into practice.[32,33] The HR manager and/or supervisor will facilitate HHR themselves, without any external consultancy. We developed HHR in such a way, that it is a self-led intervention. It will be delivered in the participating organization, likely during working hours. HR manager and supervisors are able to decide by themselves how much time they spend on HHR and how they are going to integrate HHR in the daily business. However, a rule of thumb is provided within the toolkit by the researchers. Nevertheless, we expect when using HHR more frequent and more intense, employees will be more exposed and will experience more improvement on SE

as mentioned before. A detailed description about the development and content of HHR will be published elsewhere.[34]

Effect evaluation

The effect evaluation will be a quantitative study with a pretest-posttest design with a one-year follow-up within each participating organization (T2). The employees' SE will be compared between prior to and after the HHR intervention. We will also examine whether the SE improves more, if employees are more exposed to HHR. Additionally, a budget impact analysis (BIA) will be performed to gain more insight into whether HHR is financially affordable and beneficial for employers deploying low-educated employees. The primary aim of the effect evaluation is to investigate the effectiveness of HHR on the SE of low-educated employees. The main research question is: What is the effect of HHR on the SE of low-educated employees?

Study sample and sample size

Five Dutch work organizations (a manufacturing company, a meat processing company, a cleaning company, a warehouse and a governmental institution) participated in the development of HHR. These organizations will also implement HHR and participate in the effect evaluation. Employees with lower educational levels varying from no education to secondary vocational education (coded according to the 2011 International Standard Classification of Education (ISCED-11)) will be included in HHR and the effect evaluation. In this study, we will focus on employees with lower educational levels, particularly those employees who perform low-skilled jobs within certain departments of an organization.

A power calculation was performed to determine the sample size. Based on the mean difference in SE of 0.25 (theoretical range 1 to 5) that was found between high and low-educated employees in a previous study[35], we expect SE differences between high and low-educated employees to decrease with 0.25. As the uptake and output of HHR is organization-specific, we aim to study the SE improvement in each organization separately, but we will also pool the data to examine the overall effect. With a power of 80% and a significance level of 5%, the required sample size is a minimum of 126 employees per organization[36], which implies an overall sample size of 630 employees. We expect a varied non-response and dropout rate per organization. The gross number of employees varies between 40 and 1200 per organization. For participating organizations with insufficient power, data will be pooled.

Data collection

Data for the effect evaluation of HHR will rely upon quantitative data from similar questionnaires at two time points: baseline (T0) and follow up (T2, 12 months after the start of step 1) (Figure 5.2). The baseline questionnaire (T0) will also be used as the

needs assessment instrument in step 2 of HHR. The questionnaire for the needs assessment and effect evaluation is adapted and based on the existing MAastricht Instrument of Sustainable Employability (MAISE).[35] The MAISE has been developed for measuring SE from an employees' perspective. The MAISE has been validated among employees with (on average) intermediate and higher educational levels. For use among a sample of low-educated employees and the purpose of serving as a needs assessment, the MAISE and other (self-developed) subscales, such as job control, self-efficacy and lifestyle have been adjusted, to better fit with the language and way of thinking of low-educated employees. It is our hope that this adaptation improves the reach and the validity and reliability of our questionnaires. For instance, the use of existing job control scales from existing questionnaires were still too difficult to understand by the employees when discussing these items together with them. For the effect evaluation, additional, well-validated measures were also used (e.g., vitality).

Primary outcomes

Sustainable employability (SE) will be the primary outcome of the effect evaluation and can be considered as a distal outcome measure. The level of SE is measured by means of two scales, productivity and health, from the MAISE.[35] SE measurement will be complemented by several proxies of SE:

Vitality will be measured by means of the subscale vitality of the Dutch version of the Utrecht Work Engagement Scale (UWES) (5 items).[37] The response scale ranged from 1 (never) to 7 (always/every day). A global measure of work engagement will be used as well, measured by means of the shortened Dutch version of the Utrecht Work Engagement Scale (UWES-3). This short version of UWES-9 is proven to be reliable and valid (38). Self-perceived health will be measured using a single item: "In general, what would you say about your health?" with five response options: excellent; very good; good; fair; and poor. For sickness absence, self-reported sickness absence will be measured by using a single item: "In the past 12 months, how many days were you sick-listed?" and registered sickness absence data will be drawn from the registers of the organizations. The sickness absence percentages will be obtained per participating department of each organization before the start at T0 and after 12 months (T2).

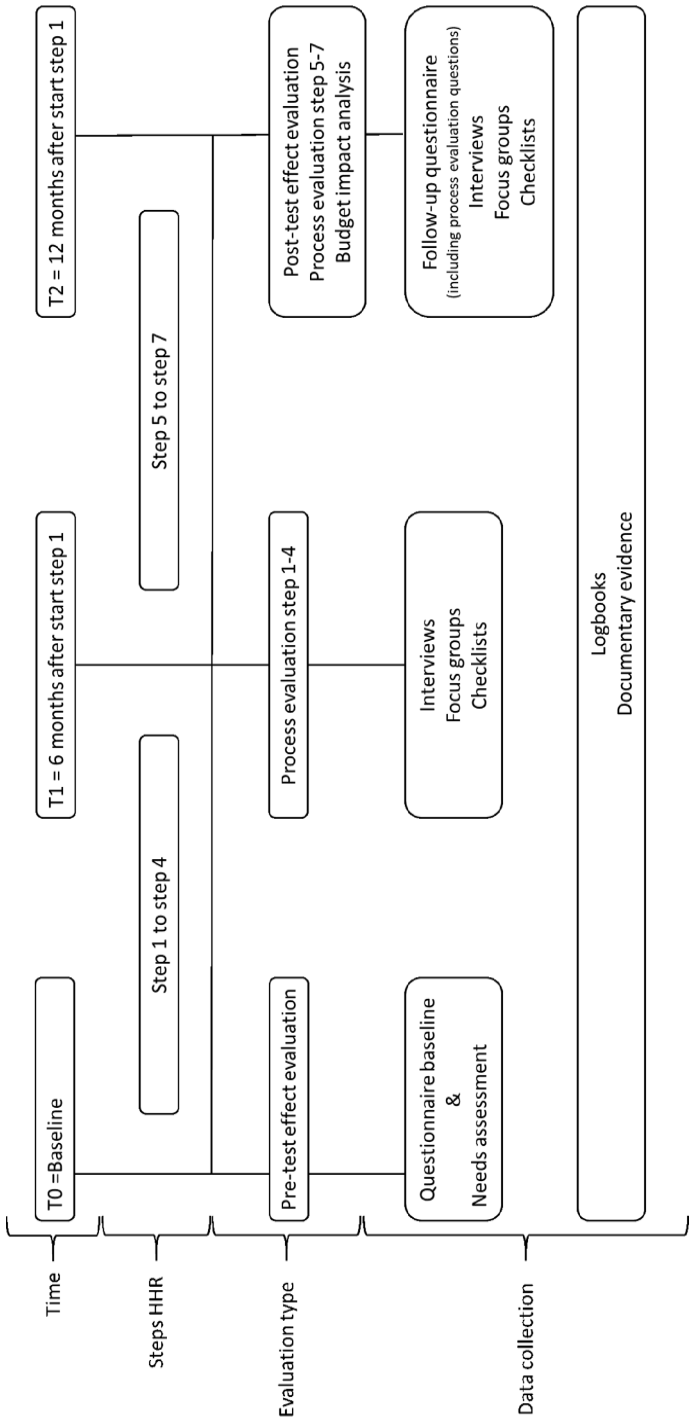

Figure 5.2 Overview evaluation moments and data collection.

Secondary outcome

Job control will be the secondary outcome of the study and will be measured by means of a self-developed scale consisting of 5 items. The items are inspired by existing lists, such as the Dutch Questionnaire on the Experience and Evaluation of Work and the Maastricht Autonomy questionnaire.[39,40] The formulation of the items was aligned to the linguistic usage and preferences of the low-educated employees. The response scale ranged from 1 (never) to 5 (always). An example item is: "I have a say in what happens on my job". Validity and reliability of this scale will be analyzed.

Other outcomes

We included several additional proximal outcomes which can be used to measure potential effects of the tailored SE interventions per organization: self-efficacy, lifestyle, social climate, social support, organization of work, adapted work possibilities, and communication and collaboration. Self-efficacy will be measured by means of the general self-efficacy scale (GSES-12) using the subscale effort (5 items).[41] Lifestyle will be measured according to the five behaviors: physical activity, smoking, alcohol use, consumption of fruit or vegetables and quality of sleep.[42-44] These five lifestyle behaviors provided a so-called 'optimal lifestyle index'. Each behavior scored '1' when the norm is met (and '0' when not met). A sum score will be computed of all five behaviors to create an optimal lifestyle index.[43] The variables social climate (4 items), social support (3 items), organization of work (9 items), adapted work possibilities (4 items), and communication and collaboration (5 items) will be measured by means of self-developed scales. Validity and reliability of these scales will be analyzed.

Information on covariates (gender, age, type of contract (e.g., permanent or flex), level of education, ethnicity, shift work) will be also collected. Finally, to examine whether the SE improves more when employees are more intensely exposed to HHR (dose-response), the process indicator dose-received will be included in the follow-up questionnaire (T2). Dose-received will be measured by means of a self-developed continuous scale at employee and organizational level (see also process evaluation). Employees will be asked to what extent they actively aware and participated in HHR.

Data analysis

Descriptive statistics will be used to analyze background characteristics. Differences over time (T0-T2) on the primary and secondary outcomes will be analyzed by means of paired t-tests of mean differences, chi square tests and regression analyses. The dose-received variable will be used to test the correlation between the dose and change in the primary outcome SE. Subgroup analyses (e.g., gender; education; type of contract) will be performed to examine specifically heightened or lowered improvements in SE in subgroups. Multilevel analyses are used to examine the association between the level of HHR implementation on the company level (level 2) and the improvement in SE

(level 1). If multilevel analyses appear not to be feasible, other ways of taking account of the nested design will be considered. Finally, when there is a need for pooling (one organization has only 40 employees in total), multilevel is similarly considered (when pooling). Analyses will be performed using SPSS version 26.

Budget impact analysis

We will perform a budget impact analysis (BIA) from the employer perspective. The main aim of the BIA is to assess whether the implementation of HHR is financially affordable for the employer (e.g., time; implementation costs of HHR; additional cost for HHR) and show the budget impact of HHR. Generally, employers have interest in maintaining a healthy and productive workforce and, thus, they may be able to offset decreased sickness absence gains against the costs. Data will be collected on the direct costs of specific resources needed to implement HHR (e.g., staff, expertise, supplies, equipment, working time) by means of interviews. The estimation of the time spent gathered in interviews will be supplemented with data from the logbooks of the employers and researchers. The time spent will be translated to costs by multiplying number of hours with the average hour salary of for the group of employees involved in HHR. We ensure that the report on both costs and benefits will be simultaneously available for employers and HR managers.

Process evaluation

The aim of the process evaluation is to evaluate, in each participating organization, the implementation process and the underlying mechanisms of the HHR's effectiveness or lack thereof (the how, what, why), and the experiences of key stakeholders with HHR. These key stakeholders might influence the implementation throughout the process in various ways and therefore the outcomes. The process evaluation will have a mixed-method design[45] and will be utilized to interpret and understand the outcomes of the effect evaluation.[46,47] The study population of the quantitative process evaluation (follow-up questionnaire T2) equals that of the effect evaluation (the employees). The study population of the qualitative process evaluation includes various stakeholders (i.e., employees, supervisors, and HR managers) at different levels of the organizations. We will examine the key process indicators suggested by Linnan and Steckler presented in Table 5.1.[48] Because the organizational context can hinder or facilitate the implementation process and outcomes, we will examine both omnibus context (e.g., general context) and discrete context (e.g., specific events during HHR) in this process evaluation.[46,47,49] In the qualitative parts of the process evaluation, we will generally follow the principles of responsive evaluation, which is well in line with the participative and dialogue-based approach of this study.[50] This participative evaluation method explicitly includes the intervention and connects the different perspectives of stakeholders in order to obtain a more complete picture.

The research questions for the process evaluation are:
- How and to what extent has HHR been implemented in the participating organizations, taking into account the key process indicators?
- What are the experienced changes and the perspectives of the key stakeholders with HHR?

Data collection and analysis

Data will be collected throughout the entire process (T0-T2), at 6 months (T1), and at 12 months (T2) after the start of step 1 of HHR (Figure 5.2). In order to gain multiple perspectives and assure data validity, data source triangulation will be applied.[51] At T2, the follow-up questionnaire of the effect evaluation will be extended with quantitative process evaluations questions covering the key process indicators: Reach, dose delivered, dose received, fidelity and satisfaction. These quantitative data will be analyzed by means of descriptive statistics. Data on the process indicators will be collected by means of different methods and at different stakeholder's levels within the organization (Table 5.1). Throughout the process (T0-T2), employers have the opportunity to give feedback by means of a feedback function built within HHR. Employers will keep track of the progress, number of meetings, time investment, participants, special remarks and events by means of a logbook and will be called monthly by the researchers. The researchers will also keep a logbook to document events and to keep documentary evidence for each participating organization. At T1, we will collect qualitative data about the experiences of employees and employers with steps 1-4 of HHR. At T2, we will collect qualitative data about the experiences of employees and employers with steps 5-7 of HHR (Figure 5.2). For both T1 and T2, focus groups and individual semi-structured interviews with the key stakeholders and other third parties (e.g., policy makers; communication staff) involved in the process will be conducted. These individual interviews and focus groups are complementary to each other.[52] The topic lists for the focus groups and individual semi-structured interviews will be based on the process indicators and will include open-ended questions about HHR, the dialogue-based approach, experiences of stakeholders with HHR, and experienced changes. All focus groups and individual interviews will be digitally recorded and qualitative data will be analyzed thematically via a qualitative data analysis software program (e.g., NVivo).

Table 5.1 Process indicators, stakeholders' level, operationalization and data collection method.

Process indicators and definition	Stakeholder level	Operationalization	Data collection method
Context The contextual factors (omnibus; discrete) and history (i.e., barriers, facilitators) that affect HHR implementation or outcomes	Employer Employees	Description of barriers Description of facilitators	Documentary evidence (T0 - T2) Logbook (T0 - T2) Focus groups (T1; T2) Semi-structured Interviews (T1;T2)
Recruitment Procedures used to approach and attract employees	Employer Employees	Description of approaches	Logbook (T0-T2) Focus group (T1; T2)
Reach Percentage of departments and employees participating in HHR	Employees	Characteristics of departments Characteristics of employees Percentage of employees, participated Drop-out and reasons	Baseline questionnaire and follow-up questionnaire (T0; T2) Logbook (T0 - T2) Focus groups (T1; T2) Semi structured Interviews (T1; T2) Checklist (T1; T2)
Dose delivered The extent to which HHR or components actually was delivered according to the intervention plan	Employer Employees	Dose delivered items (yes/no)	Logbook (T0 - T2) Questionnaire at follow-up (T2) Focus groups (T1; T2) Semi structured Interviews (T1; T2) Checklist (T1; T2)
Dose received The extent to which employees actively aware and participated in HHR	Employees	Dose-response Participation rate HHR	Questionnaire at follow-up (T2) Focus groups (T1;T2) Semi structured Interviews (T1;T2)
Fidelity The extent to which HHR was delivered as intended	Employer Employees	Statements (yes/no) Reasons	Logbook (T0 - T2) Questionnaire at follow-up (T2) Focus groups (T1; T2) Semi structured Interviews (T1; T2)
Satisfaction Employees and employer satisfaction about HHR	Employer Employees	Satisfaction rate (scale 0-10) Experiences of employees and employers	Logbook (T0 - T2) Questionnaire at follow-up (T2) Focus groups (T1; T2) Semi structured Interviews (T1; T2)

Discussion

This paper presents the protocol for the effect and process evaluation of the intervention HHR. HHR is a web-based support toolkit for employers based on dialogue and aimed at improving the SE of low-educated employees. We hypothesize that - through increasing job control - employees who are more exposed to HHR will experience better SE than employees who are less or not exposed to HHR.

Strengths of the protocol

This evaluation study provides insight into the effect and implementation process of HHR, including the underlying mechanisms that shapes the outcomes. Data triangulation using different quantitative and qualitative methods and data sources will be applied to assure the validity of this research. We expect that HHR as a whole will show positive effects on the SE of low-educated employees, regardless which organization or the effects of the tailored SE interventions developed per organization and the way we organized the process evaluation supports finding explanations for possible lack of effects. Furthermore, an economic perspective from the employer is also taken into account in a form of a BIA. The BIA will address the affordability of HHR and, together with the report on the benefits and gains of the intervention, will help employers to decide whether they want to invest in HHR.

The extensive process evaluation, including different time points and data collection methods, will be a strength to better understand the underlying mechanisms of HHR, experienced changes and how dialogue and job control is experienced by different key stakeholders over time. Furthermore, the process evaluation at T2 allows to gain insight into the specific tailored SE interventions in each organization and their related perceived effectiveness next to the experience of HHR as a whole. Finally, we conduct the evaluation study in five different sectors and settings, which will increase the generalizability of our results.

Methodological challenges

Despite this extensive study design, several methodological challenges can be pointed out. First, HHR is a generic toolkit and organizations will work with the same steps, tasks and tools. However, the way HHR will be implemented, including the use of the tools will differ per organization. Employers are free to choose those tools which best fits their situation and their specific SE problems. This might lead to differences in effects and processes across the organizations. Therefore, it is important to perform subgroup analyses. Second, the participating organizations appeared to be unable to allocate a control group, because of time limits and other concerns within organizations. The lack of a control group is a well-known issue within research of organizations; this unfortunately leads to less robust evidence about what is effective in terms of SE interventions in the workplace.[53] Hence, due to the lack of the control group it is important to study the uptake of HHR and profoundly assess whether there is a dose-response relationship. Third, the setting and context within participating organizations will be a challenge, due to constant changes (e.g., dismissing/attracting flex workers; changing role/attitude of key stakeholders). Fourth, it may vary per organization how much time the HR managers and the wider management will allow to spend by their employees, e.g., for filling in questionnaires (including the needs assessment) and to work with HHR. This is also related to the level of commitment and

support of the higher management. These changes might affect the results and will therefore be well documented throughout the process and assessed during the process evaluation moments (e.g., being dismissed clearly is a low control experience for the employee).

Despite these methodological challenges, it is important to conduct evaluation studies in natural settings of organizations and among low-educated employees in particular. Their voices need to be heard, also in research. If HHR is proven to be effective, HHR for and with this vulnerable group will be a valuable support toolkit, which can be applied on a wider scale. HHR is thereby expected to contribute to tackling the socioeconomic health gap.

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Appendix 5A

Steps	Tasks	Tools
Step 1 Prepare together	Read the vision of HHR	Information about the roles within HHR Explanation about level of dialogue and involvement at each step
	Compose a project team	Communication tips & fill-in template to create a project group for development
	Develop a project planning	Information and guidelines for project planning Information and guidelines for project timeline
	Create commitment and involvement at all levels	Fill-in HHR poster template Fill-in HHR presentation template HHR Flyer
Step 2 Measuring is knowing	Plan, spread, and conduct needs assessment	Communication tips & checklist to conduct a needs assessment Checklist privacy "Healthy at work" Questionnaire
	Analyze results of the needs assessment	Manual questionnaire analysis Fill-in report template for results of needs assessment for management
Step 3 Our problems	Communicate the outcomes of needs assessment to employees	Fill-in presentation template for employees – traffic light model (red - take action; orange - prevent further deterioration; green - maintain)
	Brainstorm about relevant problems other than the results of needs assessment	Communication tips & working format for brainstorming – post-its
	Prioritize the most important problems	Communication tips & working format for prioritizing
	Inform all employees about the problem analyses	Communication tips & fill-in poster template for top 3 problems
Step 4 Our solutions	Identify and review existing solutions (evidence-based)	Library: two matrices. Matrix 1 with simple solutions. Matrix 2: examples of scientific evidence-based interventions. Overview of useful websites Checklist to develop an intervention by the organization
	Brainstorm about possible solutions	Communication tips & working format to conduct ideas about solutions on the work floor Working format for brainstorming – post-its & brainwriting
	Prioritize the best fitting solutions	Working format – select top 3 solutions per problem – criteria for prioritizing solutions: feasibility, costs, time, effect. Working format – formulation of SMART solutions & fill-in template
	Vote by employees on the best solutions	Fill-in voting cards template for employees to vote on the best solution
	Communicate about the selected solutions	Communication tips & fill-in poster template for selected solutions
Step 5 Action plan	Decision: How to approach the selected solutions?	Preparation tips for management meeting & fill-in sheet for preparation and decision document Letter template for management Communication tips & checklist for adaptation solutions
	Develop an action plan	Communication tips & fill-in sheet action plan (W-questions) Communication tips & fill-in template to create a project group for implementation
	Communicate about the action plan	Communication tips & fill-in action plan poster template
Step 6 Let's start	Implement the action plan Periodic evaluation	Communication tips & checklist implementation Communication tips and approach for evaluation Working format for evaluation methods
Step 7 Evaluation	Conduct a final evaluation	Communication tips & approach for evaluation Working format for evaluation methods
	Plan for sustaining the successful solutions	Sustainability checklist
Step 8 Along the way: Obstacles in the process		Tips of do's and don'ts within a dialogue Working format to improve collaboration

CHAPTER 6

How a steeper organizational hierarchy prevents change - adoption and implementation of a sustainable employability intervention for employees in low-skilled jobs: a qualitative study

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Abstract

Background

Adoption and implementation are prerequisites for the effectiveness of organizational interventions, but successful implementation is not self-evident. This article provides insights into the implementation of the organizational intervention 'Healthy Human Resources' (HHR). HHR is developed with Intervention Mapping and aims at improving sustainable employability (SE) of employees in low-skilled jobs.

Methods

Qualitative data on adoption and implementation were collected by three interviews with employees and seven middle managers in five Dutch organizations and by extensive notes of observations and conversations in a logbook. Data triangulation was applied and all data were transcribed and analyzed thematically using the qualitative analysis guide of Leuven (QUAGOL).

Results

All organizations adopted HHR, but three failed during the transition from adoption to implementation, and two implemented HHR only partially. The steepness of the organizational hierarchy emerged as an overarching barrier: steeper hierarchical organizations faced more difficulties with implementing HHR than flatter ones. This was reflected in middle managers' lack of decision-making authority and being overruled by senior management. Middle managers felt incapable of remedying the lack of employees' voice. Subsequently, 'us-versus-them' thinking patterns emerged. These power imbalances and 'us-versus-them' thinking reinforced each other, further strengthening the hierarchical steepness. Both processes could be the result of wider socio-political forces.

Conclusion

This study improved the understanding of the difficulties to adopt and implement such organizational intervention to contribute to the sustainable employability of employees in low-skilled jobs. Practical implications are given for future implementation of organizational interventions.

Background

More and more organizations are implementing organizational interventions to contribute to their employees' health.[1-4] Employers often rely on ready-made health programs from third parties (often commercial) and face challenges to implement them successfully, often because of a top-down implementation. Academics also face the challenge of developing scientifically and practically relevant interventions to promote employees' health or sustainable employability (SE).[5,6] A particularly difficult and at the same time vulnerable group in this regard consists of employees in low-skilled jobs.[1,7,8] These employees have significantly higher risks of poor health and more adverse work conditions compared to employees in higher-skilled jobs.[9,10] This group barely participates in organizational health interventions, presumably due to a mismatch between these interventions and their specific needs.[8] However, organizational interventions may potentially be effective to reduce health inequalities among employees at the workplace.[11]

To address these challenges and to improve the SE of employees in low-skilled jobs, the organizational intervention 'Healthy Human Resources' (HHR) was developed in close cooperation with employees and employer representatives following the Intervention Mapping approach.[12] This approach is widely used for the development of tailored, theory- and evidence-based programs suited to the needs of a specific population and strongly built on stakeholder involvement. HHR is a web-based step-by-step toolkit to support joint groups of middle and human resource (HR) managers and employees in low-skilled jobs to develop and implement SE interventions tailored to their organization and needs, via a dialogue-based participatory approach. HHR consists of seven steps, each represented by tasks and supportive dialogue-based tools (e.g., brainstorming working formats) for performing the tasks. More details about the content and the theoretical development of HHR have been reported elsewhere.[13,14] HHR stimulates middle managers (the HHR-user) to involve their employees actively from the beginning of this process. This allows employees to have more voice and contributes to a more egalitarian and collective decision-making process, which is expected to improve their SE. Five organizations participated in the development of HHR and started to adopt and implement it. In this article, adoption refers to the decision to use the intervention, while implementation refers to the actual usage of the intervention in daily practice.[15] The theoretical framework of Fleuren et al.[16] suggests that the adoption and implementation processes can be affected (positively or negatively) by factors at four levels: (1) the socio-political context level (e.g., external forces, societal and political structures and developments); (2) the organization level (e.g., organizational culture and lack of available resources); (3) the user level (e.g., lack of positive attitude, motivation, perceived social support); and (4) the intervention level (e.g., lack of compatibility and alignment with the organization).[17] In this article, two types of users are distinguished: the employees targeted by HHR (end user) and the

middle managers, the main user of HHR (intermediate user), whose actions determine the degree of exposure of the employees to HHR.[15]

The aforementioned barriers in the theoretical framework of Fleuren et al. are reported for organizational, health-focused interventions and often result in implementation failure.[18-22] They are expected to be even more pronounced in organizations with low-skilled jobs. These employees often experience high job demands and low job control associated with several negative health effects.[11,23,24] They often perform simple and routine work tasks, which is more common in more hierarchical, centralized organizations.[25]

However, the distinction of these four levels seems insufficient to fully understand the process of adoption and implementation. Previous studies in the area of occupational health pointed at adoption-implementation gaps and underscored the complex, dependent nature of both phases.[1,26] This article aims first to study the degree of adoption and implementation of the organizational intervention HHR in a sample of various organizations, and next, to understand the variation in these degrees across these phases. The research questions were: What was the degree of adoption and implementation of HHR in various organizations, and how can the variation in adoption and implementation in these organizations be understood? A better understanding will contribute to improving the future implementation of new organizational interventions focusing on occupational health[18,27-30], particularly those with a participatory approach at work.[31]

Methods

Study design

This qualitative study used an explorative and retrospective design based on thematic analyses of logbook entries, observations and interviews collected between September 2018 and September 2020 in five Dutch organizations. This study design used data triangulation to obtain a complete and holistic understanding of the adoption and implementation processes from multiple stakeholder perspectives. Ethical approval was obtained from the Medical Ethical Committee of the academic hospital in Maastricht, The Netherlands (METC 2017-0311). Employers and employees of the participating organizations signed an informed consent form prior to their participation. The COnsolidated criteria for REporting Qualitative research (COREQ) checklist were followed[32] to ensure the quality of reporting methods and results.

Organizational settings and sample

Five Dutch organizations deploying employees in low-skilled jobs were recruited via the network that was established by the researchers in an earlier study for the development of HHR.[14] The five organizations participating in this study were: 1) a governmental institution, 2) a cleaning company, with different worksites, 3) a warehouse, 4) a manufacturing company, and 5) a meat-processing company. The organizations were purposively selected by focusing on low-skilled jobs in diverse sectors. The sizes of these organizations varied, ranging from 40 to almost 4000 employees. In four of the five organizations, the employees mainly performed physically demanding work, while the employees in organization 1 performed relatively simple administrative tasks (deskwork). Employer representatives were defined as professionals in the organization who initiated HHR (i.e., HR managers, line managers and reintegration advisors, hereafter: middle managers). Within the Dutch context, employers are responsible for sickness absence prevention and management.[33] In larger organizations, specific professionals are employed to address sickness absence (and its prevention) and facilitate this process (e.g., reintegration advisor) and were therefore included in this study sample. The middle managers were the first contact persons for the researchers in the earlier (development) study and a relationship already existed between these managers and the researchers (EH and IH). With respect to the interviews, the researchers purposively selected seven middle managers who were approached via phone or email. In addition, employees were approached by their employer, and participated voluntarily. Inclusion criteria for the interviewees were: at least one employer representative of each organization, such as middle managers, who initiated and were familiar with HHR and 2) employees who performed low-skilled work, mostly with a lower level of education and speak the Dutch language.

Data collection

Data triangulation was applied by using the following data sources: logbook entries, observations and semi-structured interviews. First, the number and content of all intervention contacts were tracked and documented in a logbook per organization (in total five logbook entries). The intervention contacts were operationalized as an activity and consisted of both internal contact moments through various communication channels within the organizations (i.e., between middle managers and employees/senior management by email or meetings) and external contact moments (i.e., researchers and organizations by phone, email, on-site and online observations, and interviews). Events, materials shared and progress of the adoption and implementation of HHR within each organization were also tracked. Second, observations in terms of verbal and non-verbal expressions during external contact moments and through contextual observations during on-site visits were collected. Field notes during the on-site visits were documented. In total, 24 pages of observations were collected. Third, semi-structured interviews were conducted by the

researcher (EH) with seven middle managers and three employees of the organizations by telephone or online (based on the respondents' preferences) between June and September 2020. Respondents were familiar with EH from an earlier study on the development of HHR and knew the reasons for doing the research and the scientific background of EH. For practical reasons, two paired interviews took place (respondents 1 and 2 and respondents 5 and 6). Table 6.1 presents the characteristics of the respondents participated in the interviews.

Table 6.1 Respondents' characteristics.

Interview number	ID	Gender	Employment title	Organization
1	1	Female	Reintegration advisor	Governmental institution (1)
	2	Female	Reintegration advisor	Governmental institution (1)
2	3	Female	HR manager	Cleaning company (2)
3	4	Male	Warehouse line manager	Warehouse (3)
4	5	Male	HR consultant	Manufacturing company (4)
	6	Female	HR consultant	Manufacturing company (4)
5	7	Female	HR manager	Meat-processing company (5)
6	8	Female	Employee	Warehouse (3)
7	9	Male	Employee	Warehouse (3)
8	10	Male	Employee	Warehouse (3)

A self-developed semi-structured interview guide with three main topics was used (Table 6.2). Topic 2 was included in the guide because the interviews took place during the COVID-19 pandemic, which might have affected the adoption and implementation. This interview format was self-developed to be consistent with the explorative design to collect information on specific circumstances that facilitated or hindered the degree of implementation within the various organizations. 'On the spot' member checking was performed by providing verbal summaries during and at the end of the interviews. Interviews lasted 39 minutes on average (range: 29-58 minutes) and were audio recorded. Data saturation was achieved by the interviews that took place after the other data had been collected. After the interviews, there was no opportunity to go back to the respondents for additional information due to time constraints and other priorities within the organizations. Since different data sources at different measurement moments were triangulated, cross-verification of the data was possible.

Table 6.2 Interview guide topics.

- **Topic 1**: Implementation of HHR
  - General experience HHR
  - Implementation of HHR (i.e., adoption process; experience of HHR-toolkit)
    - Barriers and facilitators of the implementation
- **Topic 2**: Impact of COVID-19 on the adoption and implementation of HHR
  - General experience of COVID-19
- **Topic 3**: Future implementation and continuation of HHR
  - Adaptations of HHR
  - Ideas about continuation of HHR

Data analysis

Thematic analysis[34], the practical steps from the Qualitative Analysis Guide of Leuven (QUAGOL)(35) and the theoretical framework of the four levels of factors by Fleuren et al. (used as a lens to analyze the data)[16] formed the basis for data analysis. The data of the logbook and the interviews (audio-recorded and transcribed verbatim) were analyzed simultaneously. The analysis process consisted of two parts: 1) the preparation of the coding process by paper and pencil work and 2) the actual coding process using qualitative software. Each part consisted of five stages. Table 6.3 summarizes the stages of analysis. The stages in part 1 were conducted independently by two researchers (EH and AdR) and compared and evaluated by the other authors (IH and HB). During part 2, the actual coding process took place, using computer-assisted qualitative data analysis software, Nvivo program version 12. This part was performed by EH and continuously evaluated by AdR. During the final stages, the original data sources and narrative reports were regularly consulted to verify interpretation with all authors, and the data analysis was thus approached as an iterative process. Moreover, the degree of the adoption, transition and implementation was systematically determined. First, we returned to the performed data analyses and raw data and defined from the logbook the number of contact moments per organization and categorized this per phase. Parallel, we checked the interviews and the field notes of the observations to see quotes/ expressions described supporting the phases. Based on this, together with all authors the degrees were classified into high, partial and low.

Table 6.3 Stages based on the Qualitative Analysis Guide of Leuven (QUAGOL).

Part 1: Preparation of coding process	
	Goal
Stage 1: Familiarization - thorough (re) reading of the transcripts & logbook notes	A holistic understanding of the respondent's experience – main message
Stage 2: Narrative report	Brief summary of the key storylines and essence of the interview and logbook notes
Stage 3: Translation of the narrative report into a conceptual scheme	The narrative report is translated into key concepts
Stage 4: Fitting test of the conceptual schemes	Create a dialogue of the conceptual schemes together within the research team to achieve optimization
Stage 5: Constant comparison process	Forward-backward movement of comparison between within-case (one conceptual scheme per organization) and across-case analysis (other conceptual schemes of other organizations)
Part 2: Actual coding process	
Stage 6: Drawing up a list of codes	Create a list of codes of the conceptual schemes without a specific order
Stage 7: Coding process	Link the relevant interview transcript fragments and logbook notes to an appropriate code
Stage 8: Analysis and description of concepts	Give a clear description of the concept, their meaning, dimension and characteristics
Stage 9: Extraction of the essential structure	Integration of all concepts in a meaningful conceptual framework Apply the four levels of Fleuren et al. to interpret the data
Stage 10: Description of the essential findings	

Results

All organizations adopted HHR to varying degrees. These variations were amplified during the transition to implementation and the implementation itself. Different factors at various levels helped to understand this variation, but one overarching theme was found to understand impaired implementation: steepness of the organizational hierarchy. These three findings (1. degrees of adoption, transition and implementation; 2. Understanding adoption, transition and implementation; 3. Overarching theme of steepness of the organizational hierarchy) are addressed below in more detail.

1. Degrees of adoption, transition and implementation

Degrees of adoption, transition and implementation varied across the five organizations. All organizations adopted HHR to some degree as expressed by the level of enthusiasm among the adopters (i.e., middle managers and senior management), *'Our production director who at the time fully endorsed it' (ID: 5)*. The adopters of organizations 1, 3 and 4 adopted HHR to the full extent, while the adopters in organizations 2 and 5 adopted the intervention to a limited extent, illustrating a lower level of enthusiasm. '*I noticed that it took a lot of time, effort and energy so to say, to reach people, to mobilize people, to have them participate' (ID: 3).* The degree to which the transition from adoption to implementation was made was low for organizations 2 and 5. Organization 4 made many attempts (high number of contact moments[13]) to transition from adoption to implementation but eventually failed to continue the implementation. Only organizations 1 and 3 fully transitioned from adoption to implementation. The transition to implementation was characterized by enthusiasm together with the manager's ability to translate HHR into concrete actions, *'I'm positive about the project to this day, only it is just a difficult thing' (ID:7).* The implementation was characterized by enthusiasm, ability to take concrete actions and the actual use of HHR. Despite the enthusiastic middle managers and many attempts to continue, organizations 1 and 3 decided to stop during the implementation phase and failed to implement HHR to its full extent.

2. Understanding adoption, transition and implementation

The three phases can be understood along with factors at the four levels[16] (Table 6.4). Strikingly, the user and intervention levels played a large role during adoption, while the organization and socio-political context levels came into play more prominently towards and during implementation.

Table 6.4 Overview of factors per phase and level.

Level \ Phase	Adoption	Transition adoption - implementation	Implementation
Overarching theme: steepness of the organizational hierarchy			
Socio-political context		Occurrence of external shocks	Remaining shocks to the organizations
Organization		Challenges faced in the workplace	Remaining shocks to the organizations
Intermediate user (middle managers)	The importance of support	The sandwich position Perception about employees - creating an in- & out-group	Appearance of mental fatigue
End-user (employees)		Perceptions of employees- 'us- versus-them' relationship	The feeling of not being taken seriously and a lack of communication
Intervention HHR	Alignment of HHR and organizational vision Positive impression about HHR	SE regarded as easy to embrace but difficult to implement	Pleasant way of working, but no guarantee for success

Phase 1 Adoption of HHR

Intermediate user level – middle managers

The importance of support

The importance of support emerged during the adoption phase and was perceived both positively and negatively by the middle managers. Some interviewees experienced a broad support base from their senior management at the beginning of the adoption phase, but the support changed over time: *'This was very much supported by the head office. We started with high hopes (…) it was highly prized and space was made available for it, they said: we will do that and people can participate in it and so on. (…) At one point, our HR director was fired, who considered sustainability very high (….) I see that happening very often, they say, We go back to basics' (ID: 7).* When no support was experienced, doubts arose and enthusiasm decreased. *'The type of worker, the complexity of employees, spread over many locations, so we encountered a lot of problems with accessibility, how do we reach the right people? So how do you create support for the project?' (ID: 3).* This lack of support seemed particularly disadvantageous for the employees. According to one manager, employees might not see the added value of HHR in combination with the observed organizational structure, which affected the employees' support level. *'Many people feel less connected to our organization, so I don't think they're counting on it either' (ID: 3).* Observations among employees in the cleaning company (organization 2) confirmed this thought. They experienced a lack of connectedness with their employer and felt more connected to their host organizations (where they cleaned).

Intervention level

Alignment of HHR and organizational vision

When the HHR vision aligned with the company's vision, adoption was perceived as easier. *'That matched seamlessly with the strategic plan, seamlessly with everything' (ID: 5).* Institutionalizing HHR in the everyday core business processes was also regarded as important. The vision of HHR is regarded as 'a way to act' rather than as a separate project, which yields enthusiasm, a sign of adoption, in some organizations.

Positive impression about HHR

Interviewees clearly expressed positive attitudes towards HHR in the adoption phase. HHR was seen as a comprehensive and well-functioning toolkit. *'You can call it a toolbox, clear steps, sequence, more like, I have a flyer here, I have a format here (…) Yes, I think it's neatly designed' (ID: 4).* Additionally, HHR could help a HR manager to do a better job, but how to translate this to the work floor and type of employee is difficult to imagine, because of the employees' profile and organizational structure: *'HHR, a lot of solutions that you can use as an organization for certain issues regarding health, sustainable employability. Not all of those solutions are feasible within our organization and where I thought, well that fits, it's also quite difficult to implement and to translate as a solution' (ID: 3).*

Phase 2 Transition adoption-implementation

The longer it took to transition from adoption to implementation, the more barriers at the socio-political context and organization levels began to interfere with the process. Consequently, these barriers negatively affected factors at the user level (middle managers and employees).

Socio-political context level

Occurrence of external shocks

External shocks (i.e., COVID-19; Brexit; tight labor market) interfered negatively with the transition of HHR's adoption to its implementation. These external shocks resulted in a stronger focus on the daily business and other competing priorities, whereby profit overruled the employees' SE: *'COVID-19 has brought many more things into focus. So if someone says, yes I would like to do a course and that costs so much, that is not going to happen, we are not going to make any costs' (ID: 7).*

Organization level

Challenges faced in the workplace

Internal shocks within the organizational setting also occurred. Due to budget cuts, supportive (financial) resources were not available anymore. *'We as a company have been stripped so much to the bone that you have even less support when it comes to other things, projects' (ID: 7).* Staff turnover was another barrier for continuity: *'(Name X) has fallen ill and is now out of service. In the third quarter of last year our (name Y) came along as interim HR, he promised a lot, but didn't deliver much and the support I needed for that. And now we have hired (name Z) and that is our new HR manager (….) due to all the staff changes we have been stuck for a while' (ID: 4).*

Due to these barriers, the enthusiasm of the staff involved in HHR disappeared, which had been the basis for adoption. Additionally, senior management changes and their centralized decision-making process led to a new corporate vision and competing priorities on the business agenda; due to this, the employees' SE was regarded as less important again. Middle managers themselves experienced a lack of decision-making authority to take action. Other barriers were observed, such as a lack of practical resources in terms of time, room to execute HHR and overlapping HR initiatives, and hesitation continued: *'As an organization, we already have a lot of things that we already do (…) a lot of overlap. Also between the current projects and initiatives that we had already set up (…), we have doubts whether we should continue with the project' (ID: 3).*

Intermediate user level – middle managers

The sandwich position

Due to the barriers at the organization and socio-political context levels, middle managers felt placed in a difficult, dependent position. They experienced extra effort to regain support, lower energy levels and project fatigue. This resulted in a loss of support and enthusiasm. Often they had to rebuild the support of supervisors and employees. The middle managers of one organization felt powerless when the senior management decided to terminate HHR. *'It's sometimes choosing your battles, and this is the choice, and we live up to it, it's that simple. Sometimes choices are made that make you happy and sometimes choices are made you feel less happy about' (ID: 5).* Related to the feeling of powerlessness, frustration and disappointment were expressed: *'The great disappointment has been for those people who invested time and energy again and then we are finally ready to use those tools in practice and then the entire project is cancelled…You try to communicate that nicely. Look, people are not stupid. And that is also my greatest frustration' (ID: 5).*

Perception about employees – creating an in- & out-group

The way the middle managers perceived their employees was a salient factor. They were prejudiced and characterized their employees as persons who struggle with language barriers, are difficult to reach, have reduced abstraction skills, have a different way of thinking, have low resilience and are a precarious group. Employees were considered as needing extra attention and support. Only a few middle managers described their employees as a vulnerable population and sought ways to give them a voice: *'It's just looking at how you get the most active, how do you get the most out of their voice or own needs. I think that's crucial and then it follows from this discussion that they need support or being taken by the hand. That seems to be important again' (ID: 1).*
A lack of connection and interaction between middle managers and employees was observed. Gradually, an in- and out-group developed in terms of an 'us-versus-them' relationship at the organizational level. This seemed rooted in a lack of empathy and understanding, as middle managers who had once started in the low-skilled position of the employees were able to understand the employees' better, showed empathy and did not experience an 'us-versus-them' relationship.

End-user level – employees

Perception of employees – 'us-versus-them' relationship

Employees themselves also expressed 'us-versus-them' thinking. Negative attitudes in terms of being skeptical and distrustful towards middle and senior management were observed. *'People are like a bit of staff versus management relationship, they are a bit skeptical about the line manager, like 'nothing changes anyway' (…) They're a little suspicious, I think that's just part of it' (ID: 9).* Additionally, a lack of social cohesion was experienced. *'People are somehow a little scared of something, to say everything (…) that's a shame' (ID: 10).* The power, status and influence of significant others experienced by the employees played an important role in this regard.

Intervention level

SE regarded as easy to embrace but difficult to implement

HHR focuses on SE, and the interviewed middle managers described SE as a 'container concept' that was easily embraced at first, but difficulties arose when the concept had to be translated to the practice of their employees. *'They can't make the nuance, just the word sustainable employability, they don't understand that. You have to make it easy and small. Almost children's language' (ID: 3).* Middle managers experienced a gap between their perceptions and those of their employees. The SE definition of the middle managers at the start predominated over the employees' perceptions. This caused difficulties and a lack of skills to transition from adoption to implementation.

'What bothers me, the moment I want to sell this project, I run into that it gets no real substance, because it's such a container concept, it's so extensive and you can have the feeling that you are very much involved with sustainability, while an employee is sitting next to you and does not experience it that way at all' (ID: 7). Moreover, their (HR) vision about SE and its importance did not seem to be congruent with that of others, such as direct supervisors who focused more on performance.

Phase 3 Implementation of HHR

Barriers at the socio-political context and organization levels still affected both the middle managers and employees when the phase of implementation was finally reached for organizations 1 and 3.

Socio-political context and organization level

Remaining shocks to the organizations

External and internal shocks remained present during the implementation phase, which interfered with the continuation of implementation. *'I had everything ready and printed out everything from the toolbox (…) and it actually went quite well (…) and then COVID-19 came, and we could no longer stand together in a room' (ID: 4).* Additionally, a lack of time to implement HHR properly was experienced due to daily job demands alongside the project of both the middle managers and employees: *'The workload of the managers, who would facilitate it, is extremely high (ID: 2) (…) yes, but also employees, they are above their level and so much is currently asked of employees at the moment due to the circumstances (COVID-19)' (ID: 1).*

Intermediate user level – middle managers

Appearance of mental fatigue

During the implementation phase, middle managers still experienced the barriers at the organization and socio-political context levels that were already experienced when transitioning to implementation, and middle managers behaved reactively. They felt dependent on what was happening in the wider system around them and again felt placed in a sandwich position. The daily job demands led to a lack of full focus, enthusiasm and involvement concerning HHR. '*I had the feeling that it was a neglected child to me. Because you have high workloads and our reintegration processes always come first (…) So it came a little bit next to it, I don't feel like I gave it everything' (ID: 1).* Mental fatigue arose, because implementation took too long and required pushing and pulling. It seemed too demanding for the (HR) manager to invest in a dialogue, and thus implement HHR, with this lack of available resources. *'Every time we started again, something is going on in the company. In the upcoming time, I'll be busy with all the*

ongoing issues. I don't expect (Name X) either, as our HR department has been further stripped' (ID: 4).

End-user level – employees

The feeling of not being taken seriously and lack of communication

During implementation, employees expressed disappointment when they felt they were not being taken seriously. *'Yes, I made that document and showed it to them. I did not find him (HR manager) very cooperative, because when I arrived, he was not there' (ID: 9)*. As a consequence, a negative attitude emerged, and enthusiasm eroded. The thought of 'nothing happens anyway' already experienced in the transition phase was confirmed. Additionally, the lack of communication due to eroded enthusiasm suggested that the project was already over, *'I actually thought it was all over, to be honest' (ID: 8).*

Intervention level

Pleasant way of working, but no guarantee for success

HHR still represented a 'pleasant way of working' in the phase of implementation for the middle managers of organization 1 and 3. At the same time, the implementation of HHR was experienced as a challenge due to the aforementioned factors at the user, organization and socio-political context levels.

3. Overarching theme: steepness of the organizational hierarchy

Based on the factors reported by employees and middle managers to understand the variation in degree of adoption, transition from adoption to implementation, and then implementation, the overarching theme appeared to be a steeper organizational hierarchy. Table 6.5 shows the relationship between hierarchy and adoption, transition and implementation in the five organizations.

Table 6.5 The relationship between hierarchy and degree of adoption, transition and implementation & number of contact moments

	Steeper hierarchy				**Flatter hierarchy**
Organization / **Phase**	**4**	**5**	**2**	**1**	**3**
1) Adoption	● (6)	◐ (4)	○ (7)	● (4)	● (4)
2) Transition adoption-implementation	◐ (13)	◐ (4)	○ (0)	◐ (2)	● (2)
3) Implementation	○ (0)	○ (0)	○ (0)	◐ (19)	◐ (10)

Note: 1) governmental institution, 2) cleaning company, 3) warehouse, 4) manufacturing company, and 5) meat-processing company. The degree: ● High; ◐ partial; ○ low. (#) = number of contact moments (internal (employer-employees) and external (researchers-organizations)).

A steeper hierarchy was related to a lower degree of implementation (organizations 2, 4, 5) and defined as: the power of senior management to overrule subordinates (i.e., middle managers and employees) by not giving them a voice; and a lack of middle managers' decision authority to push through and remediate the process to give employees more voice. The involved middle management layer had limited or no authority and seemed dependent on senior management for decision making. At the same time, these middle managers were dependent on immediate supervisors, who are closely involved with the employees. HHR cannot be implemented without the necessary support from other levels. These perceived power imbalances varied across organizations (being overruled was more prevalent in organizations 2 and 4, and a lack of authority by middle managers was more prevalent in organizations 2 and 5).

In contrast, a flatter hierarchy related to a higher degree of implementation (organizations 1 and 3), but was no guarantee for full implementation. Organizations 1 and 3 had a flatter hierarchy characterized by a power balance that prevented middle managers being overruled by senior management, and authority was exercised at the level of the middle managers, to give voice to the employees. In organization 1, however, the lack of a power balance eventually emerged during the implementation phase as well, paralleled by partial implementation of HHR.

Simultaneously with the power imbalance processes, a social hierarchy emerged in all organizations, namely 'us-versus-them' thinking patterns. Different social norms were observed in terms of negative attitudes, the way of communication and behavior among middle managers and employees. Middle managers spoke negatively about their employees and senior management, while employees felt distrustful towards their middle and senior management. These patterns proved to be harmful and reinforced the already existing power imbalances between senior and middle management and employees, hence the steepness of the organizational hierarchy.

Discussion

This qualitative study analyzed the process of adoption, transition from adoption to implementation, and implementation of the organizational intervention 'Healthy HR' (HHR) in five diverse organizations. All started with some degree of adoption, but only two out of five organizations implemented HHR partially; the other organizations did not achieve implementation. Employees and middle managers reported factors at all levels distinguished by Fleuren et al..[16] The organization and socio-political level factors came more into play after the adoption phase. The steepness of an organization's hierarchy appeared to be the overarching theme in understanding the degree of adoption, transition from adoption to implementation, and implementation. A steeper hierarchy constituted the main barrier.

All five organizations adopted HHR. SE, the core focus of the HHR intervention, was described as a container concept by the middle managers. This concept was useful for generating broad support and enthusiasm among stakeholders in the adoption phase. All agreed that SE was an important outcome, while concurrently having different perceptions about its meaning and translation. This empirical observation aligns with the diversity in conceptualization and operationalization of SE among different scholars.[36] In the implementation phase, this broad interpretation of SE lost its strength as it could not counterbalance the barriers. The broad concept of SE weakened the power among the middle managers.

Only two organizations fully transitioned from adoption to implementation and implemented HHR only to a certain extent. HHR builds on an egalitarian employer-employee dialogue and the willingness to give employees in low-skilled jobs more job control and voice. A mismatch occurred between this philosophy and the hierarchical organizational structures of the participating organizations. In line with Hadjisolomou and Simone[37], middle managers were caught between two structures, the social (i.e., social relations with employees) and organizational (i.e., power from senior management and supervisors). These experienced power structures resulted in a power imbalance, something which is also observed in other research.[4,38] This power imbalance goes hand in hand with the observed us-versus-them (in-group versus out-group) thinking patterns among both management and the work floor. According to social identity theory.[39] the distinction between in- and out-groups is a social phenomenon and is described as 'they (so the others) cannot speak our language'.[39] The current findings show how difficult it is to change existing behavioral patterns in organizations and the behavior of all stakeholders involved. The lower energy levels and negative attitudes among employees and middle managers affected the implementation and resulted in organizational cynicism, a common phenomenon in many organizations.[40] Hence, a steeper organizational hierarchy was related to worse outcomes (e.g., less satisfaction), a result that was found in previous research as well.[25] The context of COVID-19 amplified these processes even more. Organizations overburdened their employees and middle managers with high work demands and lost the bigger picture of the employees' well-being.[37] This might have ultimately led to an increased distrust towards senior management and resistance to health initiatives.[21] Compromising the social cohesion might also have strengthened the 'us-versus-them' thinking patterns.[40]

Both phenomena might be a result of a wider socio-political context.[21] From a neoliberal perspective, profit maximization is the sole driver, which goes together with an increased emphasis on the individual responsibility of employees, thereby distracting attention from their health in the work environment. The perspective points to the distal influence of barriers at the macro-level, ultimately and negatively affecting the employee-employer relationship.[41-43] Closely related to this is the class

discrimination that may underlie 'us-versus-them' thinking in organizations. This type of stigmatization and stereotyping is very common and impacts organizational behavior (i.e., high versus low educated), increasing the experience of inequality[44] and again pointing to macro-level forces influencing lower-level outcomes.

The longer the adoption and implementation phases lasted, the more the observed socio-political and organizational barriers evolved and started to interfere with them. The power at lower levels in organizations is too weak when the socio-political context and organization barriers become more influential.[4,18,45] Such structural barriers grounded in socioeconomic and ideological systems are generally persistent.[46] Eventually, HHR was partially implemented at best, with flatter hierarchical organizations being more successful than steeper hierarchical organizations.

Strengths and limitations

Three types of data were collected (data triangulation) in a set of five diverse organizations. By integrating these data types in the analyses, the researchers were able to follow and interpret the entire process in real-time. The QUAGOL approach to qualitative analysis strengthened the iterative process between different stages via constant interactive dialogue and data comparison with the members of the research team (disciplines in sociology; organizational psychology and occupational health) and made it possible to dive deeper into the research phenomenon.[35]

Although five different organizations were studied, caution is recommended in transferring the findings to other organizations. One or two middle managers from each organization were interviewed. However, not all organizations permitted the researchers to interview employees, primarily due to time constraints within the organizations and the problems resulting from COVID-19. Due to the small number of employees of one organization (organization 3), relevant perspectives might have been missed. Moreover, a part of the data was collected during the first wave of the COVID-19 pandemic. Due to this, the interviews were collected through telephone or an online medium, which might have influenced the data collection through for example disturbance in internet connections and limited observations of non-verbal communication of the interviewees. Moreover, due to COVID-19, working procedures changed, and there was less interaction between middle managers and employees and among the employees. However, in the analysis, we did not perceive a lack of information – data triangulation might have counterbalanced infrequent flaws in online data collection. Further, content wise no clear relation between these changes and the lack of implementation was found. It might be, though, that the pandemic reinforced power differences and the 'us-versus-them' thinking patterns.

Practical and future research implications

Although HHR was not successfully implemented, the findings add to existing knowledge on what does and what does not work, and for whom, when and under which circumstances regarding the implementation of organizational interventions.[38,47,48] With respect to the practical implications, to successfully create an organizational change, an adequate context analysis is needed to identify the organization's historical roots and its readiness for change.[49] For some organizations, HHR can be too disruptive and will not immediately match with existing organizational structures and cultures. When implementing an intervention, it is important to be aware of 'path dependency' (i.e., experiences and decisions made in the past).[50] To yield success, new policies need to be developed that are in line with existing organizational institutions (policies, norms, cultures)[51], or the organization needs to wait for an external force in the right direction, a so-called critical juncture[50] that cannot be created intentionally. A change in senior management might be an opportunity to put the right people in charge with a more democratic leadership style and a collective mindset, for whom hierarchy stands for accountability rather than for an autocratic leadership style.[25]

From an institutional theory perspective, in organizations with a power imbalance and 'us-versus-them' thinking patterns, social norms need to be changed.[52,53] For instance, an organizational culture of trust, respect, sincere interest and decentralized decision-making should be normalized before implementing an intervention like HHR. It may also be important to create awareness about stigmatizing beliefs at the organizational level.[44] Opening a dialogue with the other group could be a way to transform the 'us-versus-them' thinking patterns to we-thinking[39] and provide more agency to the group of employees and reduce stigmatization. These norms should be integrated into a democratic leadership style that promotes a true dialogue about what matters for the employees and that co-creates a culture of human dignity.[41]

Furthermore, appointing fully focused 'project champions' (ambassadors of the project) could be helpful to increase the success. They should be able to translate the intervention into concrete actions and keep up the spirit, but they can only be effective in a culture when they have decision-making authority and are assertive enough to break through the power imbalances.

With respect to research implications, the observed hierarchy seems more complex than the four levels of Fleuren et al.[16] It is impossible to remove certain barriers, and hence the entire system should be addressed. Further research is needed on how to tackle or deal with these wider socio-political forces in occupational health research, which is impossible with the categorization into four levels. For future implementation research and further development of HHR, the behavioral change wheel of Michie and colleagues could be a helpful framework to further analyses the context, the specific

roles of different stakeholders and specify behavioral changes per target group (e.g. higher and middle managers and employees).[54] Furthermore, researchers of future organizational interventions studies can learn from the presented persistent barriers involved in the adoption and implementation process of such interventions, act accordingly, and discuss them openly with organizations from the very beginning of the intervention process. Moreover, two groups were studied, the employees and the middle managers. Our findings indicated that the senior management, particularly in steeper hierarchical organizations, played an important role in the stagnation of the implementation process while we lacked direct interview materials from this group. Therefore, it would be better to involve them in future research and to increase the numbers of employees and middle managers as well.

Conclusion

This qualitative study aimed to understand the degree of the adoption and implementation of the Healthy Human Resources (HHR) intervention aimed at improving the sustainable employability of employees in low-skilled jobs. Data triangulation was chosen to obtain a holistic understanding about the adoption and implementation process. The degree of adoption and implementation varies across the five organizations and was negatively affected by steeper hierarchies. Improving the sustainable employability of low-skilled employees thus appears difficult, as it requires breaking through deeply rooted power imbalances and pervasive ‘us-versus-them’ thinking patterns.

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CHAPTER 7

Giving voice to employees in low-skilled jobs works: Effect and process evaluation of a participatory sustainable employability intervention

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CHAPTER 8

General discussion

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This dissertation aimed to develop, implement, and evaluate a dialogue-based organizational intervention to promote the sustainable employability (SE) of employees in low-skilled jobs. This intervention supports employers to actively involve their employees in developing and implementing tailored SE interventions through a dialogue-based approach that stimulates job control. By taking the perspective of the employees in low-skilled jobs as a starting point, we made other decisions than those usually taken. The employees became active stakeholders in the process to create a better match with their needs, in contrast to the existing workplace (health) interventions, which were often developed without including their perspective.[1] As a result, the participation level and effectiveness of these existing workplace health interventions are low for employees in low-skilled jobs. Hence, these interventions must be better tuned to the needs of employees in low-skilled jobs. More precisely, they should have a voice in the intervention development in their organization and become part of the game. Starting a dialogue – defined as a true conversation between employer and employees – is deemed crucial. Engaging employees in a dialogue with their employer will give them an active voice, and this in turn is expected to increase their sense of control over their work and will eventually improve their SE.

The intervention research described in this dissertation consisted of three parts with the corresponding objectives:

- Part I – Review of the evidence of SE interventions – aiming to describe the concept of SE and to examine the evidence and content of existing SE interventions;
- Part II – Development – aiming to develop an organizational intervention and a SE measurement tool tailored to employees in low-skilled jobs;
- Part III – Implementation and evaluation – aiming to implement and evaluate the effectiveness and implementation process of the organizational intervention.

Six studies were conducted and are presented in chapters 2 to 7. The current chapter discusses the main findings corresponding to the three parts in this dissertation. Next, a reflection and several methodological considerations are applied to the main findings. Lastly, recommendations for research and practice are presented.

Main findings

This dissertation contributed to refining the concept of SE, using the commonly employed definition of van der Klink et al. as the basis.[2] The concept of SE was defined by four core components: health, productivity, valuable work, and a long-term perspective. The content and effectiveness of existing SE interventions were assessed for the four core components. With respect to the content, all interventions addressed

the health and valuable work components. Mixed effects were found for effectiveness regarding the health and productivity components. The interventions showed a positive effect on the valuable work component in terms of a dialogue-based aspect in their content. No SE interventions specifically focusing on employees in low-skilled jobs were found. We concluded that future SE interventions and measures should preferably integrate SE components related to health, productivity, and valuable work in their content, and should more often have a long-term perspective. More well-developed SE interventions targeting employees in low-skilled jobs are needed. Because of the limited number of SE interventions specifically for our target group, a new organizational intervention was developed using the Intervention Mapping (IM) approach.[3] A participatory development with stakeholders (employee and employer representatives) of five Dutch organizations took place. During the development, the existing evidence of SE interventions, the work context, the perspectives of employees in low-skilled jobs and of employers, and the sources of inspiration mentioned at the beginning of this dissertation (i.e., humanism, social dialogue, active involvement, and job control) were consistently taken into account. IM was used in two ways: to develop the intervention and as an adapted intervention mapping (AIM) – the leading principle to structure the intervention, as the traditional IM approach is an intensive and time-consuming process. The added value of using AIM in combination with participatory development contributed to a good fit with daily practice in organizations with the target group.

This development process resulted in a web-based organizational intervention, 'Healthy Human Resources' (HHR). HHR supports employers to actively involve their employees in developing and implementing their SE interventions together. It contains eight steps which reflect IM, supported by different tasks and dialogue-based tools. In parallel, to strengthen the fit with the target group even more, focus groups with employees in low-skilled jobs were established to adapt the existing MAastricht Instrument for Sustainable Employability (MAISE) questionnaire[4] to their perspective and understanding. As a result, a unique tool was developed and validated for measuring SE adapted to the perspective of employees in low-skilled jobs, called MAISE-Easy. The instrument revealed an adequate to good construct validity, reliability, and criterion validity. The MAISE-Easy was used in two ways as: 1) a needs assessment tool within HHR to provide a clear insight into the employees' SE status and used as a starting point for the dialogue and 2) an evaluation tool to evaluate the effectiveness of HHR.

After the development process, the implementation of HHR took place within the population of the five Dutch organizations that were involved in its development. Due to several internal and external issues, full implementation was not achieved. Different factors at the societal, organizational, and individual levels (and their interaction) were uncovered that affected the degree of adoption and implementation of HHR. The degree of adoption and implementation varied among the five organizations and was

negatively affected by a highly hierarchical structure. More strongly hierarchical organizations experienced more difficulties to implement HHR than organizations with a flatter structure. This was reflected in a strong power imbalance and "us-versus-them" thinking patterns between employees and employers. These reinforced each other, further reinforcing the hierarchical structure. These deeply rooted structures create challenges when adopting and implementing HHR. Because of this implementation failure in the five organizations, two additional Dutch organizations were recruited to implement and evaluate HHR on a smaller scale. Although HHR was still disruptive and imposed requirements for the work context and all involved stakeholders, promising results were found. HHR showed a positive effect on the job control of employees in low-skilled jobs after the one-year follow-up, an effect that was supported by the mixed-methods process evaluation results. The dose-response analysis showed that a higher dose of HHR received resulted in better job control. However, HHR lacked an effect (yet) on the more distal outcome measures (SE, including health and productivity). It has helped to start the dialogue about health, and a shift has been set in motion within both organizations. Generally, employees became more aware of their own health and felt more responsible for a healthy workplace. Even a feeling of a collective voice and the return of the 'human' factor in the conversation was experienced, positively contributing to the positive effect on job control. HHR supported the revival of the human aspect and encouraged looking at the 'employee' as a human being with his or her craftsmanship.

Reflection on the main findings

This section presents a reflection on several main findings in light of the existing literature.

The concept of SE

This dissertation revolved around the concept of SE. It is a highly relevant topic in the field of occupational health research, because the ongoing trend of an ageing population is forcing us to extend the working lives of all employees. Although we captured the concept of SE in four core components, namely health, productivity, valuable work, and a long-term perspective in the systematic literature review (chapter 2), this abstract concept is still under development. Other scholars also tried to conceptualize SE.[2,5,6] Consistent with their work, we agreed that SE is a complex multi-dimensional concept involving many components. It is a result of an employee-job environment interaction rather than just a personal characteristic. SE is a joint responsibility between employer and employees, in which the employer facilitates opportunities at work to promote SE and the employee is capable of taking advantage of these opportunities. Hence, the concept of SE remains difficult to grasp. The

formulated SE components have different quantities and measurement units. Health reflects the individual, productivity reflects the individual and organization, valuable work reflects the person-organization interaction, and the long-term perspective reflects time and covers the whole work spectrum of employees.[7] We introduced the valuable work component in our conceptualization of SE, having been inspired by the conceptualization of van der Klink et al.[2] and Sen.[8] This dissertation showed the importance of valuable work, both in the review as an important effective component of SE interventions and in the positive effect of the intervention on job control. Active involvement of employees and a true dialogue appear effective in this regard and touch upon valuable work. Going back to the basic needs of employees and looking at their meaning of work are essential measures[9], but also the most difficult ones to grasp because of the subjective and context-specific nature of valuable work.

A different mindset towards SE

This dissertation points to the necessary change in mindset required of employers regarding SE. Currently, many organizations focus on preventing absenteeism rather than improving SE. They react to absence and are not proactive.[10] The prevention of all absenteeism within organizations is almost impossible, but a parallel focus on prevention, treating employees with human dignity, is needed to stimulate a different mindset towards SE within work environments. This dissertation revealed differences between the vision of SE among employees and employers. Employees indicated that to be sustainably employable, improvements in working conditions such as communication (i.e., dialogue), logistics, and a safe and trusting work climate were more important than healthy lifestyles (more seen as their own responsibility) (chapter 3). The employers were more interested in the latter 'easy to grasp' aspects rather than the more deeply rooted work conditions. This is consistent with other studies focusing on employees with a lower socio-economic status.[11,12] Moreover, employers might also lack knowledge about the relationship between the organization of work (including work conditions) and the health of employees, while the employees acknowledged and understood this relationship better, as shown in chapter 7 of this dissertation: "*Healthy HR, I actually see it this way, I think it's broader than health. There's also a piece of business administration in here alongside Healthy HR, so healthy is linked to progress and the way things are done at work." (Interview with an assembly employee).* The above findings underlined that a different mindset towards SE is required, particularly among employers.

Lenses of listening and learning

Throughout the processes described in this dissertation, we used intertwined listening and learning lenses which provided us with the opportunity to reflect on the multiple roles and the position of the researchers. From the beginning of this intervention research, the researchers took exploratory and facilitating roles, parallel to the role of a

traditional researcher, who acts purely as a neutral and objective knowledge provider.[13] Listening to various stakeholders at different organizational levels helped us to understand the complete picture of the specific work context situation, difficulties, and needs of both the employees and the employer. This dissertation has contributed to a better understanding of the living world of employees in low-skilled jobs.[14] During the development of HHR, the researchers experienced a moral responsibility for creating a safe environment and room in which everyone could speak openly.[15,16] They had to consider all the perspectives and voices of all employees and employer representatives involved, which sometimes produced tension between the different roles.[13] The researchers were challenged particularly in the highly hierarchical organizations, in which the power of higher management and distrust between employees and management (us versus them) played an important role and hampered listening and learning. They also experienced a dependent role when conducting research in an organizational setting in relation to the decision-making processes of powerful actors in the five organizations.

Concerning the learning lens, the researchers learned much from previous studies on the effectiveness and working mechanisms of SE interventions.[17] The participatory development of HHR created a learning environment, in which both the researchers and the employees and employer representatives learned from each other through an iterative process.[18] However, during the development, tension arose between the more engaged roles of the researchers on the one hand and the role of a knowledge provider on the other hand. Employer representatives of different organizations at times expected the researchers to produce the 'holy grail'.[13] Furthermore, the insights about adoption and implementation processes gave the researchers a profound understanding of these processes and helped to sharpen their understanding of why HHR failed in the five organizations. An iterative process of continuous monitoring and evaluation assisted learning from the intervention progress, successes, and also failures, which is essential for future complex organizational interventions.[19-21] The implementation process of HHR was further improved and adapted. Hence, the role of the researchers changed over time, as is commonly observed in change processes.[13,22] Additionally, we learned from the process evaluation in the latter study of this dissertation as it helped us to interpret the outcomes of the effect evaluation successfully.

Finally, the learning lens was also experienced during the implementation of HHR by the end users of the HHR toolkit (i.e., project leaders). They learned a pragmatic way to reach their employees in low-skilled jobs and to actively involve and communicate with them and to talk about SE (one of the difficulties faced by the employer formulated at the beginning of this dissertation). Furthermore, employees who actively participated experienced a transformation from a passive receiver of information to an active participant. They were involved during the dialogue sessions and worked with different

tools supported by HHR to activate their ideas. They became more self-determined for their health and a healthy workplace.

Healthy HR: too complex, too disruptive, or the solution for a wicked problem?

The introduction of the dissertation mentioned the remaining and persistent health inequalities, both in society and at work, and highlighted the urgent need for more effective approaches for employees in low-skilled jobs to reduce the socioeconomic health gap. HHR can be characterized as a complex intervention because of the way it was developed, implemented, and evaluated.[23] In a complex intervention, difficulties arise with identifying the effective ingredients because of the multiple components and multiple levels of stakeholders[19,24], especially in a participatory approach where problems and solutions are part of the intervention process. The dynamic, unpredictable nature of work settings further contributed to this complexity.[25] The holistic view on the adoption and implementation of HHR in the first population showed that successful implementation in practice is not guaranteed. The interaction between different levels (i.e., socio-political, organizational, user, and intervention) played a role during adoption and implementation and demonstrated the complexity of the process. In some cases, when the philosophy of HHR is too disruptive and not aligned with the structure and culture of highly hierarchical organizations, the power of higher management can be destructive for further implementation (chapter 6). Excessively strong power relations prevented change, and a gap existed between the ideology of HHR and the resistant practice. In retrospect, HHR might be too complex and disruptive because it addresses the basic needs of human dignity.

Once a good fit between the philosophy of HHR and the organizational culture and structure was noticed and employers and employees were positively convinced about delivering and receiving HHR, the final study in this dissertation (chapter 7) showed that HHR can be a first step in guiding employers to take a participatory approach and return to the basics of genuine dialogue and invite employees in low-skilled jobs to express their voice. This resulted in a positive effect on job control, supported by the dose-response relationship and the qualitative analysis by data triangulation, but not an improvement of SE (yet). The effect on job control is promising. A facilitating organizational culture (a learning organization) – in which autonomy is one of the basic needs as described in the self-determination theory[26] – is best aligned with the values of the employees. The humanistic focus of HHR in terms of listening to their true voice and needs is back and has positioned the employee in low-skilled jobs at the center of the conversation.

Reducing persistent health inequalities is often framed as a wicked problem.[27,28] This is characterized by “multiple definitions and understanding, continually evolves, multiple levels and complex solutions, leading to no clear success”.[28] In line with this, stimulating SE might also be regarded as a wicked problem based on the findings of this

dissertation. HHR and its humanistic focus demonstrated a unique approach for employees in low-skilled jobs and provided one step forward to address both wicked problems. A system thinking perspective could also be helpful.[29,30] The complex intervention HHR is embedded in a complex organizational system including several micro-subsystems that interact, such as social and power structures between employer and employees. The organizational system is again embedded in and interacts with a wider societal context (in this case, the Netherlands). From a neoliberal perspective, the priority of most organizations is still profit maximization rather than focusing on employees' SE.[31] Making money is essential for organizations to survive, and employees are needed to make this money. Work at the employee level is still seen as a basic need to earn money. This traditional view on work within society and the current contemporary challenges of the Dutch labor market introduced at the beginning of this dissertation might interact with the organizational system and influence individual behavior.[32] For instance, increased job insecurity due to temporary work contracts interacts with the organizational system, where employees might fear to speak up and express their voice.[32] Strong power structures within an organization can further enhance this[19] and even hamper participation in organizational interventions, such as HHR, as shown in this dissertation.[33] The context of the current Dutch labor market and the socio-political context might affect the priority of SE on the political and organizational agenda.[34] In any case, the system of profit over people is unsustainable to promote SE and reduce health inequalities via the workplace.

Methodological considerations

The specific strengths and weaknesses of all studies in this dissertation are discussed in the relevant chapters. This section covers the overarching methodological considerations regarding the study population, external validity, study design and evaluation, and outcome measures and instruments.

Defining the study population

In this dissertation, the terms *'low-educated employees'* and *'employees in low-skilled jobs'* were used interchangeably; both refer to our target group of interest. Initially, we focused on low-educated employees. However, during the recruitment of organizations, selecting employees based on their educational level was impractical and stigmatizing. Hence, the term low-educated was inappropriate to define our study population, and the label shifted to employees in low-skilled jobs, with an emphasis on the type of job. All employees in the organizations studied were employed in low-skilled jobs. The majority had lower levels of education, but a minority was educated at a middle or higher level. In other words, a minority of high-educated employees was involved in low-skilled jobs. This sheds light on the discussion of how to define our

study population. From a social epidemiological perspective, the distinction between high and low is common and straightforward.[35] However, this can be perceived as stigmatizing. The terms white-collar versus blue-collar were also not possible because the type of jobs involved in this dissertation had both physically and administratively demanding tasks. In the Netherlands, the replacement of low versus high education with practically versus theoretically educated employees has recently been discussed[36], but a clear copy-paste was not possible. Moreover, a shift in the Dutch education model was recently proposed, in which the level of education should not be seen as a vertical stair (university as the highest program), but seen alongside each other as a horizontal folding fan, each with its unique qualities and values.[37] Concerning low-skilled jobs, 'low-skilled' might also not be the ideal term for our study population, as these employees have certainly acquired skills to perform their job, but from a research perspective, it has advantages, because it is a clear group to investigate, and it is obvious who is responsible for them in the workplace.

External validity

The research in this dissertation was based on two populations. The first population involved in the development of HHR was relatively large and more diverse (e.g., more women, migrant background). The second population was relatively small and represented mainly a male-dominated population with a permanent contract at an employer, which might reflect limited generalizability. Female employees might experience job control and their SE differently because their nature of employment and specific problems (e.g., more work-family conflict) are different compared to men's.[38,39]

With respect to the type of contract, even with a permanent contract, difficulties arose in starting HHR and entering into the dialogue due to several factors in the organizational and wider societal context. Additionally, for a growing group of workers in the Dutch labor market, such as flex workers with no permanent job (28% in 2021)[40], HHR might be even more difficult to implement because the type of employment contract affects employees' behavior in making their voices heard.[32] Another important group are migrant (foreign) workers, often with a flexible short-term contract in low-skilled jobs (10% in 2017)[41], who are not familiar with the Dutch language, might have greater difficulty to participate in a program such as HHR, and experience difficulties to express their voice due to language and cultural barriers.[42] However, depending on their culture, they might also have more feeling for a less efficient and instrumental approach and be more developed in human interaction and communication than the average Dutch person. With this dissertation, we did not reach vulnerable groups at the bottom of the labor market, who have potentially more risk for unfair employment and worse work conditions and whose voices are not heard.[41]

Study design and evaluation of complex organizational interventions

Traditionally, a randomized controlled trial is the golden standard in intervention research. This positivistic and rigid view is often infeasible for research across complex and dynamic organizations and to examine the effectiveness of organizational interventions.[14,43] In this dissertation, a feasible adapted study design was chosen that fits the purpose and pragmatically reflects the real-world setting.[43,44] Data triangulation was the basis for data analyses based on three sources: questionnaires, interviews and focus groups, and logbook entries. Both a positivist approach in terms of a pre-test/post-test design to assess the effectiveness of HHR (i.e., using a validated questionnaire) and a more social-constructivist approach (i.e., interviews, focus groups, and logbooks) were chosen for a process evaluation to provide more room for exploring the voices and meanings of different stakeholders. The latter approach touched upon the principles of a responsive evaluation.[16] Even within HHR, these two approaches were visible: the baseline questionnaire was used by the organizations as a needs assessment. This needs assessment provided the basis for a more in-depth dialogue about the different meanings and interpretations of several topics. Furthermore, due to the lack of a traditional control group, we could not demonstrate a solid result on whether the changes in outcomes were the effect of HHR or of other unknown factors[43], such as COVID-19. However, in the final study of this dissertation, process data was combined with the outcome measures, to assess a dose-response relationship. This helped to strengthen the results of the effect evaluation.[45] Multiple data collection moments were intertwined during the process, and continuous improvement and adaptations occurred. The mixed-methods process evaluation using methodological triangulation revealed the importance of combining both qualitative and quantitative process data and provided valuable information on how, for instance, the dose of HHR was received among employees within different organizational contexts. It contributed to the commonly used question in organizational intervention research, 'what works for whom in which circumstances?'.[46]

Selection of the outcomes and measurement instruments

For the evaluation studies, job control and SE were chosen in advance as the main outcomes. Because of the ambiguity of SE, measuring the concept was challenging. To date, there is no universal measure of SE, and many proxies are used, leading to ambiguous evidence.[17,47] In this dissertation, SE was initially measured by a health and productivity scale. During the development process of the MAISE-Easy questionnaire, the social work climate, job control, and self-efficacy scales were added on an indication of the employees, because these topics were relevant for their SE. Valuable work was the overarching theme. We acknowledged that job control can also be regarded as a determinant of employee health, for instance, but this group of employees clearly stated that having a sense of control over their job was an indicator of feeling sustainably employable. The question, however, is whether it is possible to

capture SE in one universal measure or to look separately at different core components that are relevant and valuable for employees in low-skilled jobs for being sustainably employable.[48] In this sense, SE can be seen as rather subjective and intrinsic.[31] SE is more a social construct which might change over time due to different needs and values and can be interpreted in multiple ways by different stakeholders at different levels than a solely static measure.[48] This was evident during the intervention of HHR, where the concept of 'productivity' (one of the SE core components) was discussed during the dialogue sessions with respect to what does being productive mean for employees. Based on organizational preferences, different work-related outcomes (such as sickness absence, presenteeism, and burnout) could be added or replaced to further explore the relationship of SE with these outcomes.

Concerning the measurement instruments, a simplified questionnaire (MAISE-Easy) was specifically developed and adapted to employees in low-skilled jobs, a group not commonly addressed in the field of occupational health. However, the MAISE-Easy still remained difficult for certain groups of employees. Focusing on the experiences and perceived changes of various stakeholders during the process evaluation helped us to understand the quantitative findings of the questionnaire better and to identify other effects that were not anticipated. The effect and process evaluation clearly showed the positive impact of HHR on proximate and intermediate changes, but no effect (yet) on the distal outcomes.

Recommendations

The recommendations drawn on the basis of this dissertation are divided among implications for research and practice for organizations and society.

Research

Touching upon the methodological considerations, several areas are worthwhile for further research which were not realized in this dissertation. With respect to the study population, further research on the development of HHR-like interventions is recommended in the field of occupational health for specific subgroups of employees in low-skilled jobs, such as women, migrants, temporary and precarious workers. While gender, contract type, and ethnicity were included in the MAISE-Easy, the sample was too small to perform sub-group analyses. Female-dominated sectors such as healthcare and education need to be taken into account to reach more women.[49,50] To reach and involve migrant, temporary, and precarious workers in organizational interventions is challenging for researchers, because of limited participation due to cultural and language barriers and the insecure employment status leading to potentially missing data at follow-up.[42] However, the dialogue-based approach of HHR might better match

with other more relationship-based cultures compared to the Dutch individual task-based culture, and therefore the culture should be taken into account to guarantee a good fit between the employees and further implementation of HHR.

Regarding the study design and evaluation of complex organizational interventions, while most organizations still focus on profit and a drastic change to the traditional view on work is not immediately realized, the cost effectiveness of HHR still has to be studied. The budget impact analysis proposed in this dissertation was not performed. This analysis in terms of a business case and showing the return-on-investment could be helpful to support researchers with convincing employers to participate in HHR. The costs of implementing HHR remain relatively low because an organization is doing it mostly in-house without involving expensive consultants. However, higher management is often still interested in the added value in terms of money at the organizational level. Based on the promising results, the return on investment might be high. With respect to this, more focus on organizational outcomes should be taken into account along with individual outcomes. Parallel, innovative methods have to be studied to convince employers of the added value of the perceived positive learning process of HHR whose impact often cannot be expressed in numbers.[51] Following a participatory approach such as HHR might already effect a change.

Regarding the measurement instruments, the MAISE-Easy or any method involving a questionnaire remains difficult for some employees in low-skilled jobs, in general. Hence, it is recommended to consider and develop other simplified and understandable methods to quantify and measure SE and other relevant outcome measures for different groups of employees. In parallel, alternatives for the traditional questionnaires in organizational intervention research need to be studied further, in which a responsive[51] and realist evaluation[46] are promising options to evaluate organizational interventions, which better fit with employees in low-skilled jobs and even the more disadvantaged silenced groups in occupational health research. As these are time-consuming evaluation methods, it might be beneficial if future studies have a larger study sample and a longer follow-up to show and understand changes in SE. A long-term process of implementation and embedding of HHR in organizational structures and processes is required to make it into a self-evident routine. Research funds with a longer follow-up period are recommended to guarantee this.

Concerning the outcome measures, more research is recommended to better conceptualize and measure SE among employees in low-skilled jobs. The four core components to conceptualize SE in this dissertation combined both determinants and possible consequences of SE, which was also observed in previous research.[5] We defined no specific order, but according to the conceptual model of HHR that aimed to improve SE through increasing job control, more research is recommended to

investigate a possible sequence, such as whether increased job control increases SE in the long run.

Furthermore, it is important to make a clear distinction between the implementation process and the change process trigged by the implementation process in future organizational intervention research. Differentiation between proximate (Which effects arise immediately?), intermediate (Which effects arise with regard to factual (job-related), social (people-related) processes?), and distal outcomes (Which higher-level effects evolve over time?) could be helpful.[52]

Next, future studies should look at several aspects of the improvement of the organizational intervention HHR. For instance, the name "Healthy HR" is experienced as misleading by employees and managers. The abbreviation 'HR' might suggest that the intervention is only for employees of Human Resources or that employees are just seen as resources instead of the humanistic focus we want to emphasize. Additionally, HHR encompasses more than only health, and it is questionable whether Healthy HR is a good term. Another intervention name could be a solution. For further implementation of HHR, researchers should be aware of the power structures and bureaucracy embedded in a organization and the stake of powerful actors (i.e., higher management) on decision-making about organizational interventions.[19,53]

Regarding the multiple and sometimes conflicting roles of the researchers experienced during this dissertation, it is recommended to reflect on these different roles as a researcher when conducting organizational intervention research within dynamic work contexts with multiple stakeholders. Other research fields have provided the initial guidance for this.[13] An additional independent researcher (e.g., a consultant) and following the principles of team science are suggested.

Lastly, the research in this dissertation tried to contribute to reducing health inequalities and showed that the workplace appears as a context to improve job control through dialogue and active involvement of employees in low-skilled jobs. The current challenges in the Dutch labor market are characterized by persistent high work demands and low control at work, still evolving in a social gradient. Low job control remains a dominant recurrent and persistent factor affecting employees' health and well-being.[54] However, we do not know if the workplace is the most effective pathway to combat health inequalities.[55] It might be one way to follow to tackle health inequalities and requires further investigation, particularly with the increased job insecurity among different groups in the Dutch labor market and the changing work stressors (effort-reward).

Practice: organizations

HHR is an effective approach to actively involve employees and open the dialogue about their health and a healthy workplace, resulting in improved job control already after one year. However, it can be disruptive depending on the type of organization. This dissertation revealed several pre-conditions that are recommended as being in place before implementing an organizational intervention, such as HHR, in practice.

Organizations need to be less hierarchical and have an open culture of trust and respect between employees and employers before implementing HHR. Organizational structure and culture are important and should be aligned with the philosophy of HHR, otherwise HHR can be too disruptive. Employers must be open to participatory approaches and willing to pioneer and continuously learn from improvements and also failures.[56] Sincere interest in their employees' voice and needs is pivotal, even when negative aspects and frustration emerge. It takes a collective mindset of trust to bring about change.

Managers and supervisors of an organization are pivotal in shaping the voice of employees and whether an organizational intervention such as HHR will be successful.[32,57] Hence, it is recommended that they become aware of their own behavior towards their employees, become a role-model, and build trust among employees by showing respect.[58] The phrase 'Go see, Ask why, Show respect' that evolved from lean management is well suited to this[59] and is extremely important to increase the visibility and trust among employees in low-skilled jobs. Another leadership style than the traditional autocratic one is therefore required. Constructive leadership styles have been proven to have a positive effect on health and provide a buffer for employees in low-skilled jobs.[12] Transformational, servant, or engaging leadership styles can be helpful to achieve positive results on health.[60-62] These leadership styles are not identical, but generally, these leaders have an empowering, inspiring, and connecting, human-centered style and positively stimulate human behavior and intrinsic motivation, in other words the basic needs.[26,63]

Aligned with the former recommendation, fully dedicated project leaders with persistent, empathic, communicative, and assertive skills are needed before implementing HHR. During the implementation of HHR in the second population, we found that fully dedicated project leaders, who actively involve and motivate employees, are important. They were able to create a safe and open environment in which all stakeholders could speak openly. Moreover, approachability (and thus visibility) and honesty increase the success of employee voice.[32] In addition to dedicated project leaders, other driving forces from the management, employee, and researcher sides (e.g., more consultancy) are needed to support the role of the project leader.

Finally, before implementing HHR, it is recommended that all involved stakeholders sign a physical contract to commit to HHR. This symbolic contract must be visible to everyone, for instance, printing it on large posters and disseminating it across the organization. The contract is closely related to a psychological contract in previous research, referring to the expectations between employee and employer.[64] This will positively stimulate the engagement and accountability level of all involved stakeholders. They can incorporate different aspects within the contract, such as rules, expected behavior, and social norms and values. For instance, it is recommended that the involved employees are prepared and willing to take an active and responsible role in the process. A clear explanation about the ultimate goal of HHR, including a short-term and long-term perspective and the added value for everyone, is needed before signing this contract to avoid skeptical behavior and decreased trust.

Practice: society

To support organizations, more fundamental changes are needed at the policy level and in Dutch society as a whole.

From a policy perspective, the Dutch government should enable more structural financial incentives (and even fines when not fulfilled) in the field of occupational health to convince employers to invest in prevention and to promote SE.[30] Currently, the national Prevention Pact of the Netherlands focuses mainly on prevention to promote lifestyle aspects, but it is recommended to integrate an occupational health perspective as well to create more awareness about prevention in the work context on the political agenda, which hopefully will indirectly influence the organizational agenda.

The Dutch government has to find new ways to promote SE in the growing group of flex workers and self-employed. At the end of 2021, almost 60% of the working population had a permanent contract compared to 40% of those with a flexible contract or self-employed.[40] Hence, targeting employers only partially helps to promote the SE of employees in low-skilled jobs. The key role of the employer in Dutch society in recent decades might change in the near future, and a reform to a more universal welfare state might be a solution to become more inclusive.[65,66]

Based on the findings in this dissertation and the given contemporary challenges in the Netherlands, three paradigm shifts are needed in practice.

- At the societal level, a radical change is needed to move from the traditional view on work (profit over people) to a more progressive one (people over profit).[67] Different ways to convince employers are needed, because they are primarily interested in profit. Employees should be the priority within organizations and should be treated as individuals with their needs and values rather than solely aiming at the organization's existence or profit.[68] Recruiting and engaging the loyalty of employees will become a life-saver for employers. In the near future,

there will be a severe labor market shortage nationally and internationally due to the contemporary and future challenges of ageing, technologization, and different forms of employment contracts. Hence, there is an urgent need to rethink work in which people and profit go hand in hand, and work should be positioned differently in Dutch society.[65]

- Organizations should make a shift from a culture of sickness absence to a more prevention-oriented culture. It is unethical to wait until an employee reports absent because of work, and only then take care of the employee. Adverse working conditions should be the trigger to change the working conditions at an early stage. If the work cannot be changed, employees should have the job-related and personal resources to withstand the adverse working conditions. Hence, employees should be supported to develop their personal resources. A new organizational culture is needed to support this.
- Organizations should adopt bottom-up participatory approaches where a collective mindset of humanity, active involvement, and dialogue should predominate as normalized processes, related to the promising results of HHR. Employers should shift to more people-oriented approaches[67] and high-trust systems[50] to improve the work conditions of employees in low-skilled jobs, because these have more positive effects on their health than improving their lifestyle.[12]

General conclusion

The studies in the dissertation have expanded the knowledge base to conduct intervention research in the field of occupational health on the development, implementation, and evaluation of an organizational intervention targeting the sustainable employability of the understudied group of employees in low-skilled jobs. Despite the challenges encountered during the development and implementation process, HHR offers a unique approach to promote job control. A more prolonged process is needed to verify whether such a participatory approach is also effective in promoting SE and reducing health inequalities. Time is not the only important element needed, the still common traditional view on work is unsustainable, and a drastic change is needed to truly assure a collective mindset to promote SE and to address the current and future challenges in the Dutch labor market and society, such as the changing nature of work and workplaces and a different composition of the workforce due to ageing. Suggestions for improvement from the studies in this dissertation can provide a starting point to contribute to the three suggested paradigm shifts: from a traditional to a more progressive societal view on work; from an absenteeism-based to a more preventive-based organizational culture; and from a top-down, traditional, rigid mindset towards a more collective, participatory, bottom-up mindset positioning the employee in low-skilled jobs in the middle of the game.

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ADDENDA

Emmelie Hazelzet

SUMMARY

An ageing population, a rapidly changing labor market, and increased work demands are some of the many contemporary challenges facing the Netherlands. One vulnerable group specifically affected by the current challenges is the group of employees in low-skilled jobs. There are still large and persistent socioeconomic health differences in the Netherlands. Even though people with lower education levels have a higher risk of poor health, they rarely participate in health interventions at the workplace and when they do participate, they usually benefit to a lesser extent. This can be explained by a mismatch between these interventions and the top-down measures proposed by the employer and the needs and living world of the employees in low-skilled jobs. These employees often experience unfavorable working conditions, such as low job control, which negatively impact their health. To improve this situation and to reduce the socioeconomic health gap, more tailored, evidence-based approaches are needed for employees in low-skilled jobs. They should have a voice and become actively involved in the development of healthy workplaces in their organization. Because of the challenges affecting the labor market and their legal responsibility, Dutch employers are being urged to invest in prevention to promote the health and sustainable employability (SE) of their employees. Both aspects are important to keep employees healthy and productive and perceive their work as valuable throughout their working lives, which benefits the employer as well. Engaging employees in a dialogue with the employer will give them an active voice, and this in turn is expected to increase the sense of control employees have over their work and eventually will improve their SE. To support this, an organizational intervention called 'Healthy Human Resources' (HHR) is introduced based on four sources of inspiration: humanistic focus, social dialogue, active involvement, and job control.

Introduction

Chapter 1 provides a general introduction. First, the current state of work and health in the Dutch context is addressed, along with health inequalities in general and at the workplace, and the large role of Dutch employers and their relation to SE. The philosophy of HHR is explained in more detail. The overall aim of this dissertation was to develop, implement, and evaluate a dialogue-based organizational intervention 'Healthy HR' to promote the SE of employees in low-skilled jobs. The research consisted of three parts: I) review of the evidence for SE interventions; II) the development of the intervention; and III) the implementation and evaluation of the intervention. Each part with the corresponding objectives and studies is summarized below.

Part I - Review of the evidence of SE interventions - To describe the concept of SE and to examine the evidence and content of existing SE interventions

Chapter 2 presents a systematic literature review of the evidence for SE interventions. SE was defined by four core components: health, productivity, valuable work, and long-term perspective. Studies on the effectiveness of interventions aimed at employees' SE appear to be scarce; ultimately, seven studies were included. The methodological quality of these studies and hence the quality of evidence was moderate to weak. All interventions addressed the 'health' and 'valuable work' components in their content, but not always in the outcome measures. Mixed effects were found for the 'health' and 'productivity' components. The 'valuable work' component appeared essential for the effectiveness of SE interventions in terms of a dialogue-based aspect within the content of specific interventions. The review found no specific SE interventions for employees in low-skilled jobs. In conclusion, higher-quality evaluation studies on SE interventions are needed, in particular for the specific group of employees in low-skilled jobs. We concluded that future SE interventions should better integrate SE components related to health, productivity, and valuable work in their content, and should more often have a long-term perspective. These components should also be addressed in the outcome measures.

Part II – Development - To develop an organizational intervention and a SE measurement tool tailored to employees in low-skilled jobs

Chapter 3 describes the development process of the new organizational intervention using the first four steps of the Intervention Mapping (IM) approach. Participatory development took place with stakeholders (researchers, employee and employer representatives) of five Dutch work organizations. A needs assessment was done and included: 1) the systematic literature review, 2) empirical evidence, 3) scoping search, and 4) several focus group interviews with employees and employer representatives. It revealed that employees' active involvement and a continuous dialogue are essential for an intervention for employees in low-skilled jobs to promote their job control and SE. The use of IM resulted in a web-based organizational intervention 'Healthy Human Resources' (HHR). HHR offers managers a pragmatic way of working and helps them to do a better job at improving SE at the organizational level. The interviews and focus groups in the needs assessment phase revealed that practical feasibility was an important pre-condition for this intervention. A strong asset was the dual use of the principles of IM: 1) to systematically develop HHR and its content, and 2) to structure the intervention using an adapted intervention mapping (AIM) as the leading principle, as the traditional IM approach is an intensive and time-consuming process. HHR contains seven steps that reflect IM, supported by different tasks and supportive dialogue-based tools. The added value of using AIM in combination with participatory development contributed to a good fit with daily practice in organizations with employees in low-skilled jobs.

Chapter 4 describes the development and validation of an adapted version of the MAastricht Instrument for Sustainable Employability (MAISE-NL), the MAISE-Easy, which can be used for employees in low-skilled jobs. By means of six focus groups with employees in low-skilled jobs, the original MAISE-NL questionnaire was adapted to their perspective and understanding. The MAISE-Easy was distributed among employees in the five Dutch work organizations, who were also involved in the development process described in chapter 3. The response rate (n = 1033) was 53%. The MAISE-Easy focuses on four main areas using 17 scales: level of SE; factors affecting SE; overall responsibility for SE; and responsibility for factors affecting SE. Psychometric analyses showed that the MAISE-Easy has adequate to good construct validity, reliability, and criterion validity. It is a unique and promising instrument for measuring SE among employees in low-skilled jobs. The MAISE-Easy was used in this dissertation as 1) a needs assessment tool within HHR to provide a clear insight into the employees' SE status and as a starting point for the dialogue, and 2) an evaluation tool to evaluate the effectiveness of HHR.

Part III - Implementation and evaluation - To implement and evaluate the effectiveness and implementation process of the organizational intervention 'Healthy HR'

Chapter 5 proposes the study protocol for the evaluation of the effectiveness and implementation process of the HHR intervention. The protocol consisted of 1) an effect evaluation with a pretest-posttest design with a 1-year follow-up, with SE and job control as the main outcomes; and 2) a mixed-methods process evaluation at 6 and 12 months after the start of HHR to evaluate its implementation process. This includes the experiences of various stakeholders with HHR.

Chapter 6 describes the results of a qualitative study to understand the degree of adoption and implementation of HHR in the five Dutch work organizations (and variations in them). All five organizations adopted HHR, but three failed during the transition from adoption to implementation, and two organizations implemented HHR only partially. This study unraveled how factors at the societal, organizational, and individual levels (and their interaction) affected the degree of adoption and implementation of HHR and why adoption did not naturally lead to implementation. The degree of adoption and implementation was negatively affected by a highly hierarchical structure. More hierarchical organizations experienced greater difficulties with implementing HHR than organizations with a flatter structure. This was reflected in a strong decision-making power of higher management versus a lack of this power in middle managers. Middle managers felt unable to address the lack of employee participation. The vision of 'profit over people' was prominent. Parallel, 'us-versus-them' thinking patterns were observed and led to organizational cynicism (distrust and resistance). The power imbalances and 'us-versus-them' thinking patterns reinforced each other, further strengthening the hierarchical structure in the participating

organizations. This study led to a more complete and holistic understanding of the difficulties surrounding the adoption and implementation of disruptive organizational interventions such as HHR.

Chapter 7 describes the results of an effect evaluation and process evaluation of HHR in two Dutch work organizations. This study utilized a different set of organizations than those in chapters 3–6. Due to several internal and external issues, full implementation was not achieved in the five Dutch work organizations originally included, and we therefore recruited two new organizations for implementation. The lessons learned from the failed implementation were used to make adjustments in the implementation process, such as additional consultation from the researchers. For the effect evaluation, quantitative data were collected at baseline (N=120) and 12 months' follow-up (N=71) among employees. Paired *t*-tests and dose-response analyses were performed (N=50). For the process evaluation, mixed-methods process data were collected on the implementation process (recruitment, reach, dose delivered, dose received, fidelity, satisfaction, context, and perceived changes) using questionnaires, individual interviews with employees and employer representatives (N=26), focus groups (N=4), and logbooks. The results of the effect and process evaluations and the dose-response relationship showed that HHR has a positive effect on the job control of employees in low-skilled jobs. HHR had no or ambiguous effects on SE. The process evaluation revealed that HHR was partially implemented as planned and the dose of HHR received varied. Generally, a movement was set in motion within both organizations, and employees became more aware of their health and felt more responsible for a healthy workplace. Even a feeling of a collective voice and the return of the "human" factor in the conversation were experienced. In conclusion, this study presents a promising participatory approach to improve job control for employees in low-skilled jobs by actively involving them in a genuine dialogue and giving them an active voice.

Discussion and conclusion

Chapter 8 summarizes the main findings of all studies included in this dissertation, followed by a reflection on the findings, methodological considerations, and recommendations for research and practice. This dissertation contributes to a holistic understanding of how to develop, implement, and evaluate an organizational intervention tailored to employees in low-skilled jobs.

The complex, multi-dimensional concept of SE is still under development. This dissertation added insights to measure SE among employees in low-skilled jobs with a tailored questionnaire. The intertwined listening and learning lenses appeared important to reflect on the multiple roles of the researchers during a participatory organizational process.

The organizational intervention HHR is potentially a disruptive intervention aimed at the rather wicked problems of SE promotion and reduction of health inequalities. Next, several methodological aspects, such as defining the study population and the limited generalizability, were discussed. A feasible study design adapted to the complex nature of work organizations and data triangulation were the strengths of this research. A recommendation for future research was a longer follow-up to show and understand changes in SE.

In practice, three paradigm shifts are needed: 1) a societal shift from the traditional view on work (profit over people) to a more progressive view (people over profit); 2) an organizational shift from a culture of sickness absence to a more prevention-oriented culture; and 3) a mindset shift from a top-down approach of facilitating the number of health-promoting interventions by the employer to a more bottom-up participatory mindset, where humanity, active involvement, and dialogue should dominate as normalized processes in work organizations.

SAMENVATTING

Vergrijzing van de bevolking, een snel veranderende arbeidsmarkt en toenemende werkdruk zijn enkele van de vele hedendaagse uitdagingen waar Nederland voor staat. Werknemers in laaggeschoolde banen worden in het bijzonder getroffen door deze uitdagingen en vormen daarmee een kwetsbare groep. In Nederland bestaan nog steeds grote en hardnekkige sociaaleconomische gezondheidsverschillen. Hoewel mensen met een lager opleidingsniveau een hoger risico lopen op een slechte gezondheid, nemen ze zelden deel aan gezondheidsinterventies op het werk en als ze deelnemen, profiteren ze daarvan meestal in mindere mate. Dit kan verklaard worden door een verschil tussen enerzijds deze interventies en de top-down maatregelen van de werkgever en anderzijds de behoeften en leefwereld van werknemers in laaggeschoolde banen. Deze werknemers ervaren vaak ongunstige werkomstandigheden, zoals weinig beslissingsruimte (in het Engels aangeduid als 'job control') over hun werk, wat een negatieve invloed heeft op hun gezondheid.

Om deze situatie te verbeteren en de sociaaleconomische gezondheidsverschillen te verkleinen, is er een meer op maat gemaakte, empirisch onderbouwde aanpak nodig voor werknemers in laaggeschoolde banen. Ze moeten een stem krijgen en actief betrokken worden bij de ontwikkeling van gezonde werkplekken in hun organisatie. Vanwege de uitdagingen op de arbeidsmarkt en de wettelijke verantwoordelijkheid van werkgevers, worden Nederlandse werkgevers aangespoord om te investeren in preventie ter bevordering van de gezondheid en duurzame inzetbaarheid van hun werknemers. Beide aspecten zijn belangrijk voor werknemers om gezond en productief te blijven en hun werk gedurende hun hele werkzame leven als waardevol te blijven ervaren, wat ook de werkgever ten goede komt. Door werknemers in dialoog te brengen met de werkgever krijgen ze een actieve stem, en dit zal naar verwachting het gevoel van beslissingsruimte van werknemers over hun werk vergroten en uiteindelijk hun duurzame inzetbaarheid verbeteren. Om dit te ondersteunen wordt in dit proefschrift de interventie, genaamd 'Gezond HR – samen aan de slag' geïntroduceerd. Deze interventie richt zich op het niveau van de organisatie en is gebaseerd op vier inspiratiebronnen: humanisme, sociale dialoog, focus op actieve betrokkenheid en literatuur over beslissingsruimte in het werk.

Introductie

Hoofdstuk 1, de algemene inleiding, beschrijft de huidige situatie op het gebied van werk en gezondheid in de Nederlandse context. Verder worden de ongelijkheden op het gebied van gezondheid in het algemeen en op de werkplek in het bijzonder, en de grote rol van Nederlandse werkgevers en hun relatie tot duurzame inzetbaarheid beschreven. De filosofie van de organisatiegerichte interventie Gezond HR wordt nader toegelicht. Het overkoepelende doel van dit proefschrift was het ontwikkelen,

implementeren en evalueren van op een dialoog gebaseerde organisatiegerichte interventie 'Gezond HR', om de duurzame inzetbaarheid van werknemers in laaggeschoolde banen te bevorderen. Het onderzoek bestond uit drie delen:

I) Een overzicht opstellen van wetenschappelijk bewijs voor duurzame inzetbaarheid interventies;
II) Het ontwikkelen van de interventie;
III) Het implementeren en evalueren van de interventie.

Hieronder worden alle onderdelen met bijbehorende doelstellingen en deelonderzoeken samengevat.

Deel I – Overzicht wetenschappelijk bewijs duurzame inzetbaarheid interventies – de beschrijving van het concept duurzame inzetbaarheid, het bewijs voor en de inhoud van bestaande duurzame inzetbaarheid interventies

Hoofdstuk 2 beschrijft een systematische literatuurstudie over wetenschappelijk bewijs voor duurzame inzetbaarheid interventies. Duurzame inzetbaarheid werd gedefinieerd aan de hand van vier kerncomponenten: gezondheid, productiviteit, waardevol werk en lange termijnperspectief. Er zijn niet veel studies naar de effectiviteit van interventies gericht op de duurzame inzetbaarheid van werknemers; in totaal werden slechts zeven studies geïncludeerd. De methodologische kwaliteit van deze studies en daarmee de kwaliteit van het bewijs waren matig tot zwak. Alle interventies waren inhoudelijk gericht op de componenten 'gezondheid' en 'waardevol werk', maar deze componenten werden niet altijd gemeten als uitkomstmaat. Wisselende effecten werden gevonden voor de componenten 'gezondheid' en 'productiviteit'. De component 'waardevol werk' bleek essentieel voor de effectiviteit van duurzame inzetbaarheid interventies. Dit kwam tot uiting door dialoog gebaseerde aspecten in die desbetreffende interventies. Geen enkele van de geïncludeerde studies was volledig gericht op werknemers in laaggeschoolde banen. Concluderend zijn er evaluatiestudies van hogere kwaliteit nodig over duurzame inzetbaarheid interventies, met name voor de specifieke groep van werknemers in laaggeschoolde banen. Toekomstige interventies moeten de duurzame inzetbaarheid componenten gezondheid, productiviteit en waardevol werk beter integreren in de inhoud van de interventies, en moeten vaker een langetermijnperspectief hebben. Deze componenten dienen ook gemeten te worden als uitkomstmaten.

Deel II – Ontwikkeling – het ontwikkelen van een organisatiegerichte interventie en een meetinstrument voor duurzame inzetbaarheid voor werknemers in laaggeschoolde banen

Hoofdstuk 3 beschrijft het ontwikkelingsproces van de nieuwe organisatiegerichte interventie aan de hand van de eerste vier stappen van de Intervention Mapping (IM)-

benadering. Een participatieve ontwikkeling vond plaats met belanghebbenden (onderzoekers, werknemers- en werkgeversvertegenwoordigers) van vijf Nederlandse arbeidsorganisaties. Er werd een behoefteonderzoek uitgevoerd en dat omvatte: 1) de systematische literatuurstudie, 2) empirisch bewijs voor de inspiratiebronnen beslissingsruimte, actieve betrokkenheid en dialoog, 3) scoping search naar bestaande online tools en 4) verschillende focusgroep interviews met werknemers en vertegenwoordigers van de werkgevers. Hieruit kwam naar voren dat voor het bevorderen van beslissingsruimte en duurzame inzetbaarheid van werknemers in laaggeschoolde banen actieve betrokkenheid van werknemers en een continue dialoog tussen werkgever en werknemers essentieel zijn. Het gebruik van IM resulteerde in een online organisatiegerichte interventie 'Gezond HR' (www.gezondhr.nl). Gezond HR biedt managers een pragmatische manier van werken en ondersteunt hen op organisatieniveau om de duurzame inzetbaarheid van hun werknemers te verbeteren. Uit de interviews en focusgroepen in het behoefteonderzoek bleek dat praktische toepasbaarheid een belangrijke randvoorwaarde was voor deze interventie. Een pluspunt was het dubbele gebruik van de principes van IM: 1) voor het systematisch ontwikkelen van Gezond HR en de inhoud ervan, en 2) voor het structureren van de interventie met een aangepaste Intervention Mapping (AIM) als leidend principe. Gezond HR bevat zeven stappen die IM weerspiegelen, ondersteund door verschillende taken en dialoog-gestuurde hulpmiddelen. De toegevoegde waarde van het gebruik van AIM in combinatie met een participatieve ontwikkeling droeg bij aan een goede aansluiting bij de dagelijkse praktijk in de arbeidsorganisaties met werknemers in laaggeschoolde banen.

Hoofdstuk 4 beschrijft de ontwikkeling en validatie van een aangepaste versie van het 'MAastricht Instrument of Sustainable Employability' (MAISE-NL), de MAISE-Easy, die gebruikt kan worden voor werknemers in laaggeschoolde banen. Door middel van zes focusgroepen met werknemers in laaggeschoolde banen werd de originele MAISE-NL vragenlijst aangepast aan hun perspectief en inzicht. De MAISE-Easy werd verspreid onder werknemers van de vijf Nederlandse arbeidsorganisaties, die ook betrokken waren bij het ontwikkelingsproces zoals beschreven in hoofdstuk 3. De respons was 53% (n=1033). De MAISE-Easy richt zich op vier hoofdgebieden die worden gemeten door middel van 17 schalen: de mate van duurzame inzetbaarheid; factoren die van invloed zijn op duurzame inzetbaarheid; algehele verantwoordelijkheid voor duurzame inzetbaarheid; en verantwoordelijkheid voor factoren die van invloed zijn op duurzame inzetbaarheid. Uit psychometrische analyses bleek dat de MAISE-Easy een adequate tot goede constructvaliditeit, betrouwbaarheid en criteriumvaliditeit heeft. Het is een uniek en veelbelovend instrument om aspecten van duurzame inzetbaarheid te meten bij werknemers in laaggeschoolde banen. De MAISE-Easy werd in dit proefschrift gebruikt als 1) een instrument voor de behoeftepeiling binnen Gezond HR, om duidelijk inzicht te geven in de uitgangssituatie rondom duurzame inzetbaarheid en als startpunt

voor de dialoog, en 2) als een instrument om de effectiviteit van Gezond HR te evalueren.

Deel III - Implementatie en evaluatie – het implementeren en evalueren van de effectiviteit en het implementatieproces van de organisatiegerichte interventie 'Gezond HR'

Hoofdstuk 5 beschrijft het onderzoeksprotocol voor de evaluatie van de effectiviteit en het implementatieproces van Gezond HR. Het protocol bestond uit 1) een effectevaluatie met een pretest-posttest design (een onderzoeksopzet met een voor- en nameting) met een 1 jaar follow-up, met beslissingsruimte en duurzame inzetbaarheid als belangrijkste uitkomstmaten; en 2) een gemengde onderzoeks-methoden ('mixed methods') procesevaluatie 6 en 12 maanden na de start van Gezond HR ten behoeve van de evaluatie van het implementatieproces van Gezond HR. In deze procesevaluatie zijn ook de ervaringen van verschillende stakeholders met Gezond HR meegenomen.

Hoofdstuk 6 beschrijft een kwalitatief onderzoek naar de mate van adoptie en implementatie van Gezond HR in vijf Nederlandse arbeidsorganisaties. Alle vijf organisaties adopteerden Gezond HR, drie organisaties slaagden er niet in om de overgang van adoptie naar implementatie te maken, twee organisaties implementeerden Gezond HR, en slechts gedeeltelijk. Deze studie gaf inzicht in de vraag hoe factoren op maatschappelijk, organisatorisch en individueel niveau (en hun interactie) de mate van adoptie en implementatie van Gezond HR beïnvloedden en waarom adoptie niet vanzelfsprekend leidde tot implementatie. De mate van adoptie en implementatie werd negatief beïnvloed door een sterk hiërarchische structuur. Meer hiërarchische organisatiestructuren hadden meer moeite met het implementeren van Gezond HR dan organisaties met een plattere structuur. Dit kwam tot uiting in een sterke beslissingsbevoegdheid van het hoger management en gebrek daaraan bij het middenkader. Het middenkader voelde zich niet in staat het gebrek aan werknemersparticipatie aan te pakken. De visie 'winst boven mensen' was prominent aanwezig. Tegelijkertijd werden 'wij-zij'-denkpatronen waargenomen en deze leidden tot organisatorisch cynisme (wantrouwen en weerstand). De machtsverschillen en de 'wij-zij'-denkpatronen versterkten elkaar, waardoor de hiërarchische structuur in de deelnemende organisaties verder werd versterkt. De organisaties met een plattere structuur kwamen verder met de implementatie van Gezond HR en ervaarden minder machtsverschillen. Het middenkader was hierdoor beter in staat om werknemers een stem te geven en te betrekken in een gelijkwaardig dialoog. Deze studie leidde tot een vollediger en holistisch inzicht in de problemen rondom de adoptie en implementatie van disruptieve organisatiegerichte interventies zoals Gezond HR.

Hoofdstuk 7 beschrijft de resultaten van een effect- en procesevaluatie van Gezond HR in twee Nederlandse arbeidsorganisaties. Deze studie maakte gebruik van andere

organisaties dan die beschreven in de hoofdstukken 3 tot en met 6. Als gevolg van verschillende interne en externe factoren is volledige implementatie in de vijf oorspronkelijk arbeidsorganisaties niet gerealiseerd. Om deze reden zijn er twee nieuwe organisaties geworven om Gezond HR in te implementeren. Uit de eerder, minder goed verlopen implementatie, zijn lessen getrokken voor aanpassingen in het implementatieproces, zoals aanvullende advisering aan de organisaties door de onderzoekers. Voor de effectevaluatie zijn kwantitatieve gegevens verzameld op het nulpunt (N=120) en 12 maanden later (N=71) onder werknemers. Er werden gepaarde *t*-testen en dosis-responsanalyses uitgevoerd (N=50). Voor de procesevaluatie werden verschillende procesgegevens ('mixed methods') verzameld over het implementatieproces (werving, bereik, geleverde dosis, ontvangen dosis, getrouwheid, tevredenheid, context en waargenomen veranderingen) met behulp van vragenlijsten, individuele interviews met werknemers en werkgeversvertegenwoordigers (N=26), focusgroepen (N=4) en logboeken. De resultaten van de effect- en procesevaluatie en de dosis-responsrelatie toonden aan dat Gezond HR een positief effect heeft op de beslissingsruimte van werknemers in laaggeschoolde banen. Gezond HR had geen effect op duurzame inzetbaarheid. Uit de procesevaluatie bleek dat Gezond HR gedeeltelijk werd uitgevoerd zoals gepland en dat de ontvangen dosis van Gezond HR varieerde. Over het algemeen kwam er bij beide organisaties een beweging op gang en werden werknemers zich meer bewust van hun gezondheid en voelden ze zich meer verantwoordelijk voor een gezonde werkplek. Er werd een gevoel van een collectieve stem en de terugkeer van de "menselijke" factor in het gesprek ervaren. Deze studie laat zien dat Gezond HR een veelbelovende participatieve aanpak is voor het verbeteren van beslissingsruimte voor werknemers in laaggeschoolde banen door hen actief te betrekken bij een echte dialoog en hen een actieve stem te geven.

Discussie en conclusie

Hoofdstuk 8 geeft een samenvatting van de belangrijkste bevindingen van alle studies die in dit proefschrift zijn beschreven, gevolgd door een reflectie op de bevindingen, methodologische overwegingen en aanbevelingen voor toekomstig onderzoek en de praktijk. Dit proefschrift draagt bij aan een holistisch kijk op de ontwikkeling, implementatie en evaluatie van een organisatiegerichte interventie voor werknemers in laaggeschoolde banen ter bevordering van duurzame inzetbaarheid.

Het complexe, multidimensionale concept van duurzame inzetbaarheid is nog in ontwikkeling. Dit proefschrift heeft meer inzicht gegeven in hoe duurzame inzetbaarheid kan worden gemeten onder werknemers in laaggeschoolde banen met een op maat gemaakte vragenlijst. In dit proefschrift zijn diverse onderliggende luister- en leer perspectieven zichtbaar, en deze bleken belangrijk voor het duiden van de verschillende rollen die onderzoekers kunnen aannemen tijdens een participatief organisatieproces.

De organisatiegerichte interventie Gezond HR is potentieel een disruptieve interventie gericht op de complexe vraagstukken (in het Engels aangeduid als 'wicked problems') rondom bevordering van duurzame inzetbaarheid en vermindering van gezondheidsverschillen. Het onderzoek dat in dit proefschrift werd beschreven had diverse sterkere en zwakkere punten. Enkele sterke punten van dit onderzoek waren onder andere een haalbare onderzoeksopzet aangepast aan de complexe aard van arbeidsorganisaties, en de toepassing van datatriangulatie. Het definiëren van de onderzoekspopulatie bleek uitdagend. Ook zijn de resultaten van dit onderzoek maar in beperkte mate generaliseerbaar omdat de onderzoekspopulatie voornamelijk uit mannen met een vast contract bestond. Een van de aanbevelingen voor toekomstig onderzoek was een langere opvolging om veranderingen in duurzame inzetbaarheid aan te tonen en te begrijpen.

Op basis van de resultaten van dit onderzoek zijn er minimaal drie paradigmaverschuivingen nodig: 1) een maatschappelijke verschuiving van de traditionele visie op werk (winst boven mensen) naar een meer progressieve kijk (mensen boven winst); 2) een organisatorische verschuiving van een ziekteverzuimcultuur naar een meer preventiegerichte cultuur; en 3) een mentaliteitsverandering van een top-down benadering van gezondheid bevorderende interventies door de werkgever naar een meer bottom-up aanpak, waar het menselijke aspect, actieve betrokkenheid en dialoog over de gezondheid van werknemers (ofwel het hart van de organisatie) de norm moeten zijn in arbeidsorganisaties.

IMPACT

This dissertation yielded insights into the development, implementation, and evaluation of the organizational intervention 'Healthy HR'. The intervention aimed to promote the sustainable employability (SE) of employees in low-skilled jobs. This chapter reflects on the impact of this research on science and society.

Scientific impact

The studies in this dissertation contributed to a more profound scientific knowledge base on promoting SE for employees in low-skilled jobs. First, based on an intensive participatory development process with researchers, employees, and managers of different organizations, a unique evidence-based organizational intervention was developed, called 'Healthy HR' (HHR) (www.gezondhr.nl). The use of an adapted Intervention Mapping approach[1] and participatory development can be inspiring for other researchers who aim to develop organizational interventions in natural settings with practical feasibility.

Second, a unique and promising instrument was developed for measuring SE that was specifically adapted and simplified to employees in low-skilled jobs, called MAISE-Easy. This is not common in the field of occupational health and could facilitate other researchers to use this questionnaire or as inspiration to tailor their measurement instrument to their target group.

Third, the research revealed insights into the adoption and implementation processes of HHR in daily practice and unraveled the complex processes and issues surrounding the adoption and implementation of organizational interventions. Our holistic understanding is highly relevant for researchers who are involved in implementation research.

Fourth, when successfully implemented, HHR offers a unique and successful participatory approach. It revealed changes in perceived control among employees in low-skilled jobs, a key concept in relation to employee well-being, particularly in low-skilled jobs. A more prolonged process is needed to verify whether a participatory approach like HHR is effective in promoting SE and reducing health inequalities.

Finally, the studies in this dissertation utilized a wide methodology for evaluating complex interventions involving both quantitative and qualitative research methods and including different perspectives of multiple stakeholders representing all organizational layers, such as employees, supervisors, human resource (HR) managers, and members of the higher management, to be as explorative as possible to capture the overall picture. This is highly relevant for researchers involved in these interventions in an unpredictable and dynamic setting.

Dissemination

The results in this dissertation touch upon multiple disciplines and could be interesting for researchers in the areas of occupational health, work and organizational psychology, public health, sociology including socioeconomic health differences, and human resources and organization management. They are particularly interesting for those who work with organizational interventions in natural and dynamic work settings. The obtained knowledge of this dissertation was therefore disseminated in various ways. All chapters in this dissertation are or will be published under open access in international journals of different disciplines to give researchers access to the findings. The findings of the studies were presented at various international conferences on Public Health, Disability Management, and Work & Organizational Psychology. Findings were also presented at seminars, workshops, or symposia for researchers as well as HR professionals and policymakers at the regional and national levels.

From an educational perspective, the findings of this dissertation also have an impact on student teaching. In the Intervention Mapping (IM) module of the Master in Health Promotion and Education at Maastricht University, a yearly lecture was given about our adapted IM approach in the work setting. Several students (from the Master in Work, Health and Career at Maastricht University) wrote their theses on topics related to the intervention HHR and the datasets obtained. One of these theses was published as an article about the development and validation of the MAISE-Easy, presented in chapter 4 of this dissertation.

Societal impact

The studies in this dissertation were conducted at the organizational level, but the results have a societal impact at different levels: the micro-level (i.e., the individual), organizational level (i.e., everyone within a work organization), and the societal level (i.e., Dutch society and government). These levels are not isolated, they influence each other.

Individual level

> *"A piece of awareness from HHR for home, how do I eat, how do I live, what do I do, how does it affect work. Because everything feeds back to how I can function at work, so it's nice to have some awareness" (quote from interview with one of the employees).*

In this dissertation, the employee in a low-skilled job was the starting point and the main interest group. The MAISE-Easy in HHR was used to support employees to participate in the dialogue. The results have an impact on the individual employee and even the individual in a broader sense. They showed that employees who were actively

involved in HHR were more aware of their health and felt responsible for a healthy workplace. A sense of a collective voice and the return of the "human" factor in the conversation were noted. Although the impact on SE is still unknown, the first results are promising. Positive results were shown for improved job control, and their SE will likely improve when a participatory approach like HHR is prolonged. These positive changes can have an impact on the individual's overall well-being. This first step in awareness can help people to become more engaged about their pathway of healthy ageing, both at work and in their private lives, and think about what is valuable to them.

Organizational level

> *"There is now a real picture of what motivates these men. I think that's actually the best achievement, because I think ultimately within the organization, the thinking is very often done for people, without them (the men) really being heard and seen." (Quote from interview with one of the project leaders)*

The majority of the results in this dissertation derive from a collaboration with seven Dutch organizations with employees in low-skilled jobs (all in the for-profit sector). The results showed that HHR helped to start the dialogue about health and set a movement in motion within organizations. The step-by-step process offered within HHR supported the dialogue and actively involving employees in participatory work formats (see photo). This showed that following a participatory process like HHR is already having an effect. Following the steps within HHR, multiple solutions varying from quick-win solutions (e.g., new working shoes; hand trucks; end-of-the-week meeting) to long-term structural ones (e.g., appreciation; recruitment of new employees) were formulated for the chosen problems selected with the employees. Furthermore, according to the employees, improvements in working conditions such as communication (i.e., dialogue), logistics, and a safe and trustworthy work climate were more important for their SE than healthy lifestyles.

The above findings are relevant for supervisors and HR managers within other organizations, who can learn from the findings when they want to focus more on promoting SE. The HHR toolkit, including the MAISE-Easy, can be used as a starting point to initiate a dialogue with their employees in low-skilled jobs. Investing in listening, genuine dialogue, and genuine interest in employees and acting on it seriously can achieve positive change, as shown in this dissertation, and the

participatory approach of HHR can guide supervisors and managers to achieve this systematically.
Furthermore, internal organizational policy should focus more on SE and prevention, with the employee at the center, as advocated in this dissertation. Progressive work organizations which put the health and SE of employees first in their vision and actions will have more motivated and engaged employees and potentially reduce the cost from absenteeism (one day of sickness absence costs about €230-400 per day).[2] This also improves employee retention, which is extremely important given the current staff shortages in the labor market. A progressive view will help to create a positive image and position the organization differently in the labor market, which in turn is of interest to the individual employee. HHR is highly relevant to make organizations more independent of expensive consultancy firms that might not use the evidence-based scientific insights. HHR can stimulate them to make use of their in-company knowledge.

Societal level

The findings of the dissertation can be relevant to the Dutch government, including policymakers. It advocates for a radical change towards a more progressive view on work and prevention. To combat the current and future challenges in the Dutch labor market and reduce the still persistent health inequalities, the current societal view on work is unsustainable. A new proposed sustainable infrastructure is needed that stimulates prevention among employers and employees and puts work in a different perspective, in order to have longer-term consequences for society as a whole, such as a healthier society and less pressure on pension, healthcare, and social security costs.

To conclude, this dissertation forms an important basis to understand and promote the SE of employees in low-skilled jobs in Dutch organizations. Two participating organizations have ambitions to continue with HHR and further embed it into their internal organizational processes. For the future, HHR should be improved further based on the results of this dissertation, such as reconsidering the intervention name. The consultancy efforts of the researchers in this dissertation will be used to develop education modules for HR professionals to train them about the philosophy of the intervention and how to put it into practice. It is planned to pilot these modules as part of the Work and Health Academy Maastricht. A project proposal is being submitted.

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IMPRESSION HEALTHY HR

Impression Healthy HR (Gezond HR)

Below an impression is shown of essential webpages of 'Healthy HR' (www.gezondhr.nl), including the home page, the task page and the tool page. The home page presents an overview of the eight steps and related tasks (Figure 11.A.1). This page provides access to separate task pages (Figure 11.A.2), where the user can find the task's main aim and description, an overview of tools belonging to that task and a start/stop button for performing the task. Via the task page, the user can enter the tool page (Figure 11.A.3). This page provides the tool's aim and description, target group, an indication for time needed, a button to download the tool and a heart button to indicate the selected tool as favorite and to add this tool to 'My toolkit.' 'My toolkit' is presented as a separate page (Figure 11.A.4).

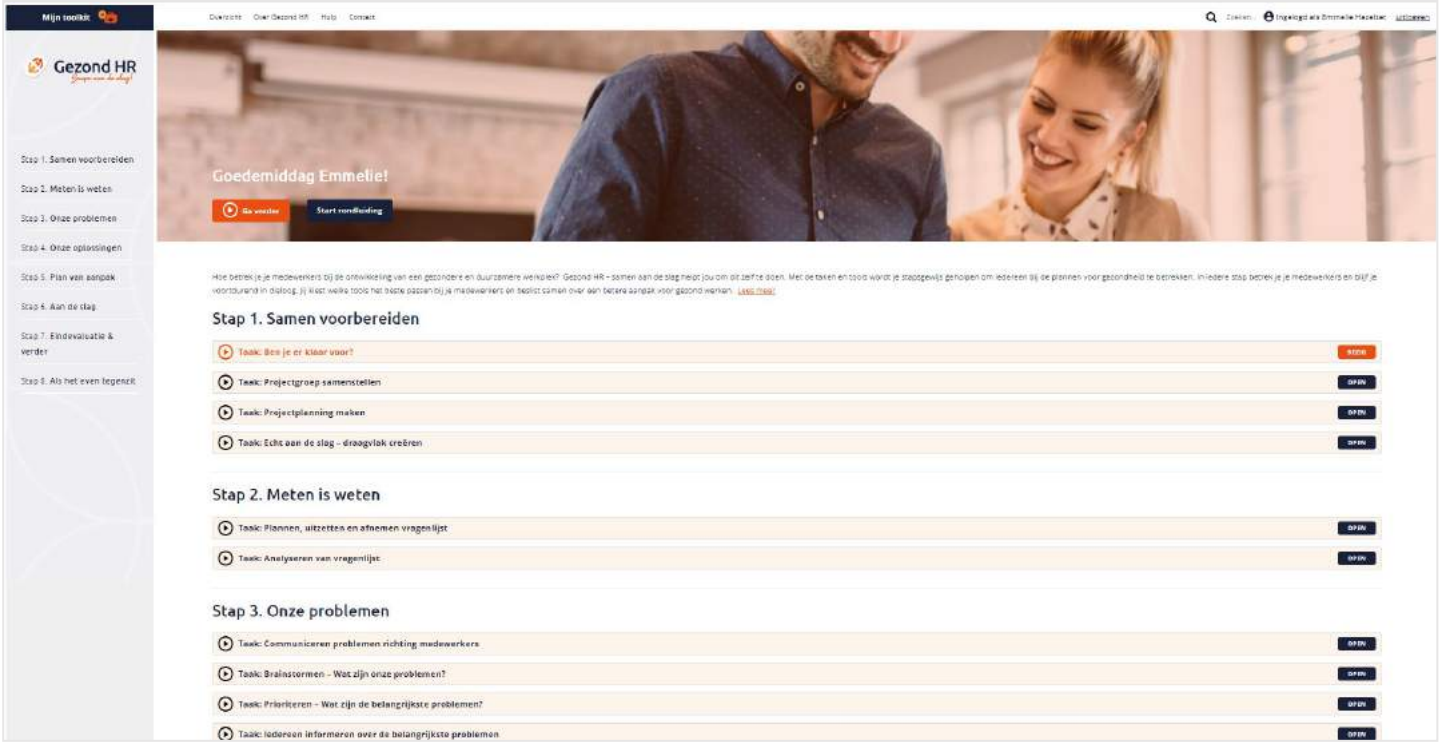

Figure 11.A.1 Homepage Healthy HR

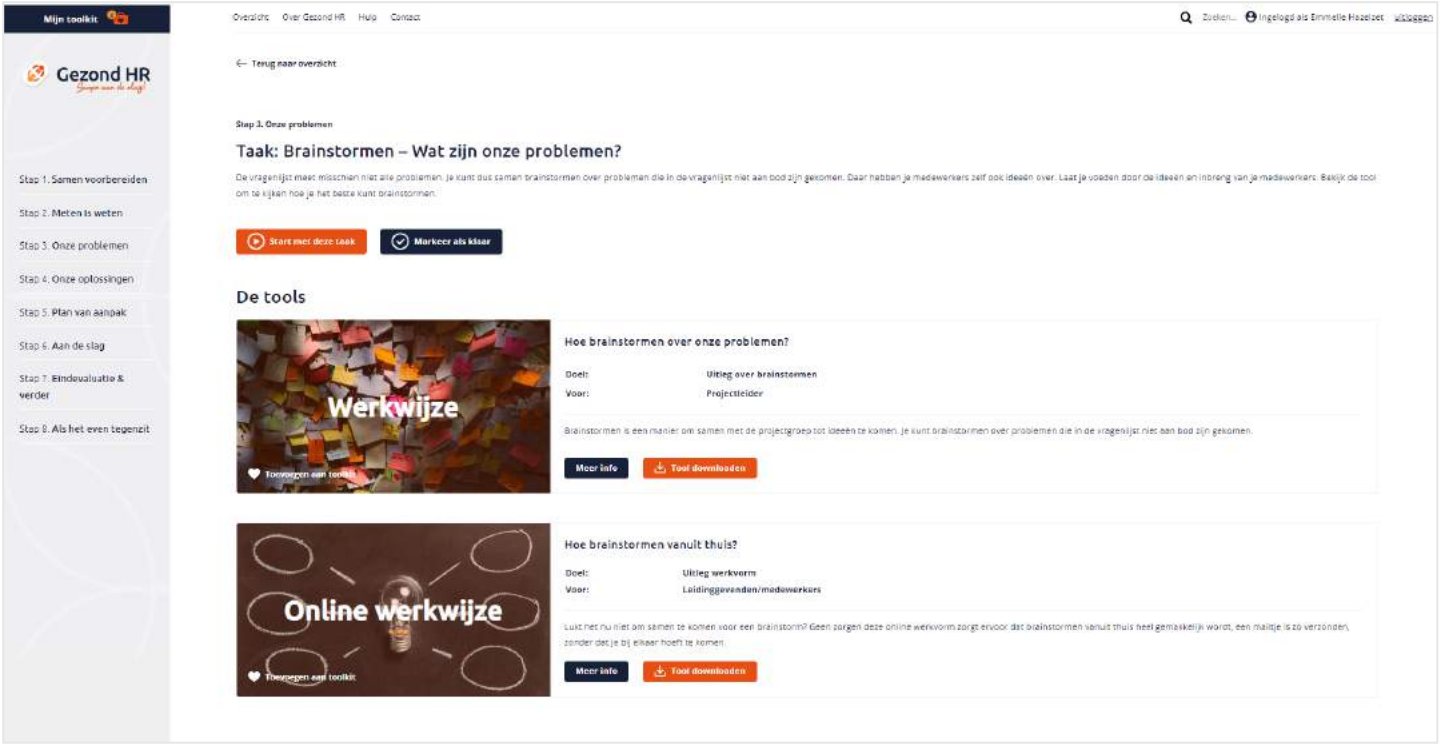

Figure 11.A.2 Task page Healthy HR

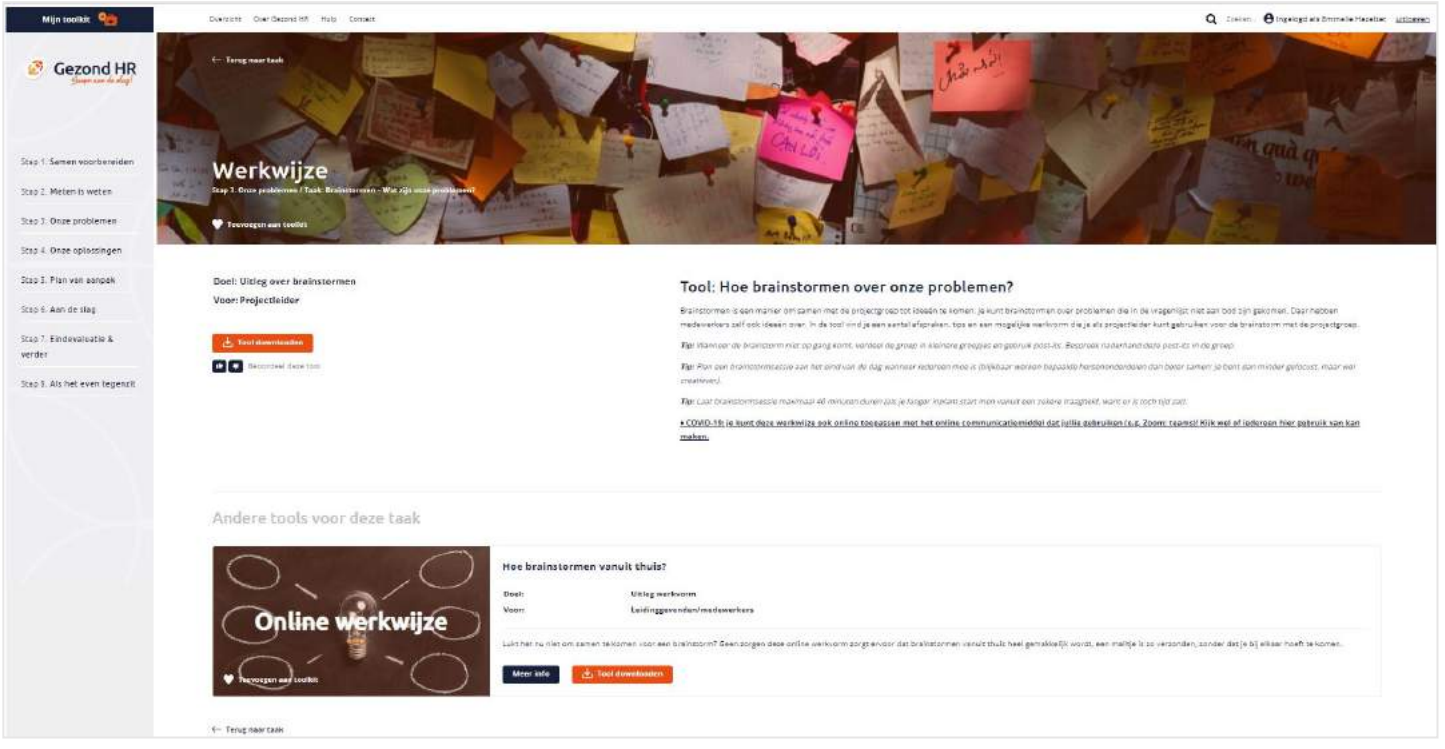

Figure 11.A.3 Tool page Healthy HR

Figure 11.A.4 Page 'my toolkit'

DANKWOORD

“It always seems impossible until it's done."

Op 1 juni 2018 startte ik mijn promotietraject. Precies 5 jaar later komt er een einde aan dit grote avontuur. In deze periode heb ik veel mensen leren kennen, veel geleerd en steun gekregen. Zonder hen was dit proefschrift nooit tot stand gekomen en daarom wil ik iedereen bedanken in dit stuk.

Allereerst wil ik mijn promotieteam bedanken die mij het vertrouwen hebben gegeven om deze uitdaging aan te gaan: mijn promotoren Angelique de Rijk en Hans Bosma, en copromotor Inge Houkes. Tijdens de sollicitatieronde bleek dat ik niet aan alle vinkjes voor een typische promovenda voldeed, maar mijn praktische insteek heeft er toch voor gezorgd dat we samen een heel mooi traject hebben neergezet. Jullie betrokkenheid en begeleiding tijdens mijn promotie hebben gezorgd voor een mooie groei in mijn wetenschappelijke loopbaan, maar hebben mij ook gevormd tot wie ik nu ben. Mijn promotie kende pieken en dalen, vooral tijdens de coronaperiode, maar er was altijd wel iemand bij wie ik terecht kon. Soms maakten jullie het mij niet makkelijk na een promotieoverleg. Ik liep naar buiten met drie verschillende versies van schriftelijke feedback, met veel pijlen en verschillende handschriften. Toch zorgde deze feedback weer voor een beter en inhoudelijk stuk. Heel veel dank voor alles.

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Hans, een sociaal epidemioloog in hart en nieren. Jouw kritische noot en gerichte feedback, zoals “Kan het niet wat korter en kraakhelder”, hielden mij altijd scherp. Terwijl ik soms 200 woorden nodig had, wist jij het in slechts 25 woorden uit te drukken (hoe dan?!). Op het einde lukte dit mij steeds beter, maar goed, een mens kan niet overal goed in zijn hè. Vanwege het kwalitatieve karakter van het onderzoek, miste jij soms de cijfertjes, maar we hebben dit goedgemaakt in het laatste artikel. Je was altijd betrokken in mijn werk en welke fietsrondjes ik weer had gemaakt door het Heuvelland in het weekend. Dank voor alles!

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kwam, wist jij snel tot de kern te komen en dacht je met me mee. Samen hebben we vele kilometers gemaakt op de snelweg om interviews af te nemen bij bedrijven. Op een gegeven moment werden we al door de mannen herkend: “Ah daar zijn de dames weer”. Op de terugweg konden we dan alles even doorspreken wat we hadden gehoord. Vaak stond mijn kantoordeur open en hoorde ik je voetstappen op vrijdagmiddag al aankomen om even te kletsen over van alles en nog wat, vaak niet gerelateerd aan werk of onderzoek. Dank je wel!

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A

Oud-collega’s van SOCMED, dank voor jullie interesse en betrokkenheid bij mijn onderzoek. De gezellige teamuitjes en kerstdiners zal ik zeker missen. De wijnproeverijen, huifkarritten, fietstochten en schapendrijven ga ik niet snel vergeten.

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Madelon en Eva, ooit zijn wij samen het avontuur in Maastricht begonnen tijdens de bachelor en vormden we samen Totally spies. De afgelopen vijf jaar zijn jullie altijd betrokken geweest. Af en toe een lief kaartje met 'Working from nine till wine' deed vooral wonderen in de laatste fase. Dank voor jullie steun en liever te dik in de kist dan een feestje en een bitterbal gemist!

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ABOUT THE AUTHOR

Emmelie Hazelzet was born on December 27, 1992 in Bergeijk, the Netherlands. In 2011, she completed secondary education at Pleincollege Sint Joris, in Eindhoven. She continued her education at Maastricht University, where she completed a bachelor's degree in European Public Health in 2014, including a minor healthcare at Jönköping University, Sweden. In 2015, she obtained a master's degree in occupational health (master Work, Health and Career) at Maastricht University. She conducted her thesis research at the department of Insurance Medicine at Karolinska Institutet in Stockholm, Sweden. From 2016 until June 2018 she worked as a project leader in a start-up and coordinated several projects within the social domain in Eindhoven.

Emmelie started her PhD- trajectory at the department of Social Medicine at Maastricht University in June 2018, under the supervision of Prof. dr. Angelique de Rijk, Prof. dr. Hans Bosma and Dr. Inge Houkes. Her PhD research focused on the development, implementation and evaluation of an organizational intervention of employees in low-skilled jobs to promote their sustainable employability. During her PhD, she collaborated closely with a number of Dutch work organizations and stakeholders, such as employees and (human resource) managers, in order to jointly develop a participatory approach. The project was funded by the Netherlands organization for health research and development (ZonMw), and resulted in this dissertation.

Besides her research, Emmelie was involved in educational activities, mainly in the Bachelor programs European Public Health and Health Sciences, and the Master program Work, Health and Career. She fulfilled a variety of teaching roles, such as tutor, trainer, assessor, lecturer and thesis guidance. In 2021, she obtained her University Teaching Qualification at Maastricht University. During her entire PhD period, she has been member of the PhD-panel within the CAPHRI research school. She represented other PhD candidates at the department of Social Medicine and the research line Health Inequities and Societal Participation.

Currently, Emmelie works at Maastricht University hospital MUMC+ as 'coordinator work-related support in clinical care for patients' and coordinates the hospital-wide implementation of work-related support for patients, for which Prof. dr. Annelies Boonen (MUMC+, rheumatologist) and Prof. dr. Angelique de Rijk received a Next Step grant from the MUMC+ board. In the upcoming years, she aims to continue connecting science with the daily practice and challenges of working life and having an advisory and educational role in health (-care related) prevention.

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