# MOTIVATED AND HEALTHY TO WORK!

## Predictors of and Interventions for Sustainable Employment and Promoting Return to Work

J.J.J.M. Huijs

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*Gemotiveerd en gezond aan het werk!*
*Voorspellers van en interventies voor duurzame inzetbaarheid en het bevorderen van werkhervatting*

(met een samenvatting in het Nederlands)

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**Jenny Josephina Jacoba Maria Huijs**
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**Promotoren:**
Prof.dr. R.W.B. Blonk
Prof.dr. A.W. Taris

**Copromotor:**
Dr. I.L.D. Houtman

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# 1

# Introduction[1]

[1] Solo-authored with helpful comments from Irene Houtman, Toon Taris and Roland Blonk.

Work plays a very important role in people's life. For instance, Jahoda's latent deprivation theory [1,2] states that having employment provides not only a steady income to workers, but it also offers them five latent functions or benefits. These five latent functions are (1) time structure, (2) regular enforced activity, (3) provision of a social status and identity, (4) a shared collective purpose, and (5) regular social contacts outside their direct family. These functions of work are essential for the satisfaction of psychological needs and mental health [1-4]. Employment appears to be the only social institution that can provide all the five latent functions simultaneously and to a sufficient degree [1,2]. Studies have shown that employed individuals have more access to these five latent functions than unemployed [3,4], underlining the importance of having a job.
When employees become absent from work for a longer period due to sickness, they may experience similar losses as people who become unemployed. They may not only lose part of their income, but also the benefits of having access to the five latent functions of employment. Long-term sick leave can have negative effects for employees, such as a decrease in quality of life and personal fulfilment, loss of sources of social support, loss of income, a decrease in self-esteem, and a decline in career prospects [5-7]. In addition to these individual consequences, long-term sickness absence has negative consequences for the organization concerned and society at large because of the high costs of sick leave, the loss in productivity, medical consumption, and disability benefits [8-10]. For example, it has been estimated that work-related injury and illness result in the loss of 3.3 % of all work years in the EU, at an annual cost of roughly € 476 billion [11]. The costs for all these stakeholders could decrease if either sick leave is *prevented* or if employees would *return to work* (RTW) earlier. However, both long-term sickness absence and return to work are complex phenomena. They are not only influenced by health, but also by a wide variety of personal, work-related and social or legal factors [12-16].

## 1.1 The Dutch social security system

Towards the end of the previous century (mid-1980s and 1990s) the number of people who received disability benefits in the Netherlands was enormous. In 1990, the Netherlands spent 4.7% of its GDP on disability insurance, over three times more than the OECD average [17]. Therefore, the Netherlands were characterized as the country with the most out-of-control disability program of the OECD countries [18]. To decrease the number of people receiving disability benefits and regulate this problem, the Dutch government made several changes in its disability system. The key in lowering influx in disability benefits turned out to be increasing the responsibilities of the employers. In 2002, the Wet Verbetering Poortwachter (Gatekeeper Improvement Act) was introduced, aiming to stimulate RTW in the first year of sick leave by strengthening the responsibility for

RTW of both employee and employer. The employer is obligated to continue to pay the wages or salary of their employee on sick leave at a minimum of 70% and a maximum of 100% for at least two years (since 2004). This two-year period can be extended, either on a voluntary basis when the employee and the employer need more time to complete the RTW-process, or an employer is sanctioned by the Employee Insurance Administration Agency (UWV) to extend the two-year period in case of insufficient effort of the employer. Both the employer and employee are responsible for undertaking activities aimed at RTW. They are both obligated to exert their strength to promote sustainable participation of the employee on sick leave and should give reintegration a maximum chance of succeeding. Employers are obligated to hire an occupational physician (OP) for the sick-listed worker, and sick-listed workers are required to visit the OP within the first 6 weeks of sickness absence.

The OP's advice on RTW is based on a multifactorial problem analysis, resulting in a plan for the employee's RTW made by both the employee and the employer. If an employee stays ill for more than two years, a social insurance physician will determine the capacity for work and the degree of disability as a percentage of the worker's former wage. Since the introduction of the Work and Income Act (WIA) in 2006, the threshold to receive disability benefits is raised from 15% to 35%, which means that if employees are considered to be disabled for 35 percent or more disability benefits are provided [18]. In addition, disability benefits for disabled employees are restricted to a maximum of 75% percent of the last-earned salary. Furthermore, the WIA encourages individuals to work in addition to the benefits they receive to increase their income and approach their prior level of income.

These changes in the social security system lowered the influx in disability benefits from 4.7% of the GDP in 1990 to 2.1% in 2007 and less than two percent in 2010 [17,19]. This influx was mostly due to the Gatekeeper Improvement Act, by making employers responsible for paying sickness benefits and by strengthening their sickness monitoring obligations [18,19]. However, there are also some concerns regarding the current social security system. Employers may be more reluctant to hire new employees because of their high responsibilities and disability insurance risks [18].

## 1.2 The paradigm shifts regarding sick leave and return to work

The changes in the Dutch social security system can been seen in light of two paradigm shifts that have taken place in the field of sick leave and RTW. The first paradigm shift concerns the way work is looked upon. Previously, work was seen as the problem: it is the cause of psychological or physical problems and returning to work thereby will worsen these problems [20]. Thus, employees on sick leave should first completely recover from their health complaints before

returning to work. However, nowadays work is seen as a tool for recovery. Work can help in the recovery process of health problems, work keeps people healthy [2-4,7,20]. This paradigm shift is also seen in psychiatric rehabilitation research [21]. Medical models promoted a *train-place model*, in which people with psychiatric disabilities were first trained in a range of skills before they were placed in a working environment. Conversely, the new paradigm promotes a *place-train model*: people with psychiatric disabilities are first placed on a job and then trained in the specific skills they need to succeed in this new setting.

The second paradigm shift is from 'sick leave as an automatic response' to 'sick leave is a decision'. In the past, work was not considered a tool for recovery but rather as something that can worsen the health problems. Therefore, sick leave was a logical, largely unavoidable and necessary response to adverse and unhealthy working conditions. Today, sick leave is viewed as a decision by the employee involved. A model that can be used to illustrate this decision making process is the model of illness flexibility [22]. This model considers ill-health most often to be a prerequisite cause of sickness absence. However, there are also other legitimate reasons for sick leave, such as grief, pregnancy and life crisis. The work ability of employees is also determined by the adjustment latitude (see Figure 1). This adjustment latitude describes the opportunities that ill employees have to align their work with their current work capacity, e.g. being able to work part-time, work at a slower pace or temporarily perform different work tasks. Thus, adjustment latitude is the decision authority of an employee to adjust work to their illness in order to maintain the ability to work. In addition, absence from work can have negative consequences, depending on the type of work and the organization. These negative consequences could occur for the employee him-/herself (such as economic loss or accumulation of work tasks), for his/her colleagues (like higher levels of work pressure or having to carry out extra work tasks), or for other parties such as one's patients, clients or pupils whose meetings or consultations are cancelled. These adverse consequences may act as attendance requirements, compelling an employee to attend work despite illness. Specifically, employees who work in health care or as a teacher have a substantially higher risk of continued working when being ill because other parties rely on them [23]. The likelihood to make the decision to keep working is higher for employees who have a higher level of adjustment latitude and a higher level of attendance requirements [24].

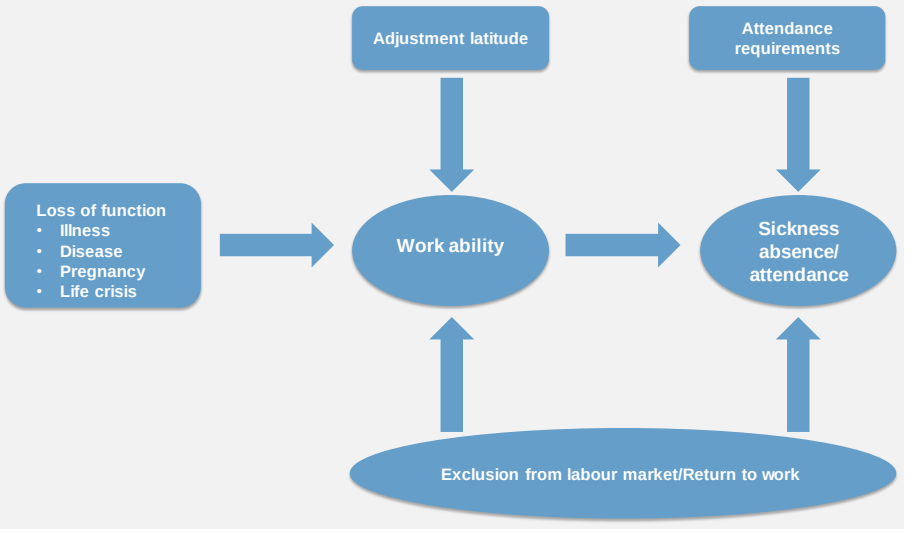


Figure 1 The model of illness flexibility [Source: 22]

## 1.3 Interventions to influence the decision process and prevent sick leave

As mentioned before, work provides several functions or benefits [1,2] and job loss or long-term sick leave can decline the access to these functions of employment. Employees who are on long-term sick leave often feel isolated and alienated from society [6,25]. It is possible that this loss of functions and these feelings of isolation not only emerge when an employee is on long-term sick leave, but also when an employee mentally withdraws from his or her job. When employees feel disconnected from their work and their organization, their income and time structure may not change, but their social identity, their shared collective purpose and their social contacts may decline. Thus, although these people still have a job, they might experience less access to the latent functions of their job which can result in mental health issues. We call these feelings of disconnection to the job and the organization *mental retirement*. Mental retirement refers to employees who seem to be counting the hours of each working day and the days until retirement and whose motivation to work has gradually shifted from intrinsic to instrumental. ‘My job’ and ‘my company’ have become ‘that job’ and ‘that company’. Such employees may be described as having ‘mentally retired’ from the organization, while they remain working. This new concept of mental retirement is especially interesting since sustainable employability - referring to employees’ capacities to function in work throughout their working life - has become a key topic in the last decades [26,27].

Two major developments are responsible for this increased attention. First, due to technical developments, globalization and innovations, skills demands and the

labour market are rapidly changing [28,29]. Organizations need to be more flexible and adaptable, which requires other competencies from their employees than before. This causes employees' skills to become obsolete and endangers their sustainable employability. Second, the Dutch working population is rapidly ageing due to lower birth rates and a decline in mortality rates [30,31]. The average age of employees in the Netherlands was 36.2 years in 1990; in 2000 it had increased to 38.3 years, and in 2014 it had further increased to 41.9 years [32]. The aging of the working population has put the Dutch pension system under pressure [30]. In response, the Dutch government increased the official pension age, causing the effective retirement age to also increase considerably. In the beginning of this century, the effective retirement age in the Netherlands was just below 61 years, in 2017 this had increased to almost 65 years [32]. These two developments have led to an increasing pressure for maintenance of physical, mental and cognitive abilities of the labour force to ensure that employees remain employable and stay healthy, motivated, competent and productive at least until the age of retirement [26,27].

Based on an initial exploration in a previous Dutch study, mental retirement appears to consists of three aspects [33]. First, compared to others, employees who are ‘mentally retired’ appear to have a decline in interest in learning and developing. Second, these employees seem to have a reduced motivation and show less work engagement. The third aspect that appears to be linked to mental retirement is the feeling that one is not appreciated. These three alleged components might have negative consequences for employees (e.g., lower job satisfaction and mental health), and therefore also for the organization (reduced productivity, sick leave, profit loss) and society in general (higher costs due to early retirement, well-being) [28,33-36]. Mental retirement may be an interesting new topic in the prevention of sick leave, since the decision to call in sick also depends on the level of commitment to the job [36], especially since the working population is aging and older employees might experience higher levels of mental retirement due to a decline in interest and participation in learning activities and disengagement [37-40].

Mental retirement is an appealing concept, but there still is a lot of uncharted territory. For example, is mental retirement linked to age? More research is needed to study the conceptual structure, the validity and its predictors and effects. With the increased establishment of the concept of mental retirement, it is important to develop an intervention that reduces or prevents mental retirement. Interventions that focus on the organizational level might be more effective to prevent sick leave than individual-focused interventions, since they target a wider population and may be able to deal more effectively with the complexity of the workplace itself [41]. Research has shown that several features are important for organizational programs or interventions to be effective. Firstly, a tailor-made approach is advocated. Tailoring improves the utilization of the results, helps to choose the interventions that meet the specific needs of the team or organization

and make effective action plans [42-44]. Secondly, a stepwise approach is effective by providing a framework for organizations that can be used to make suitable choices for interventions [43]. A third important feature is a participatory approach. By using the knowledge, skills and perceptions within the team (of the employees as well as the supervisors/management), a feeling of joint ownership is created during the program [43,45]. Participants feel more in control and experience a greater sense of fairness and justice [45]. Thereby, not only awareness is created but also a joint responsibility for both the problems as well as the solutions for these problems. In addition, participation can also decrease the resistance to change and smoothen the change process [45-47]. A newly developed intervention aimed at reducing mental retirement should be based on these features of organizational programs. A participatory approach may be especially important in a mental retirement program, since such an approach creates more commitment which is an essential aspect of mental retirement.

## 1.4 Interventions to influence the decision process and increase RTW

In addition to preventing sick leave, research is also needed to enhance RTW. As mentioned before, existing research mainly focused on predictors of sick leave and the onset of disorders, but not on the factors that may promote or hinder RTW [16,48]. Although there may be similarities, it is plausible that the predictors of sick leave differ from those of RTW [49]. The research that has been done on the predictors of RTW has focused on four groups of predictors: health, individual, legal context and work characteristics. Health characteristics have most frequently been investigated as predictors of RTW. Several studies indicate that poor health, and especially depressive symptoms, adversely affect work status and duration until RTW [16,50].

Next to health characteristics, several individual characteristics have shown to be related to RTW such as age, level of education, lower income and self-efficacy [16,48,50-52].

The third group of predictors concerns the legal context. Disability policies and social security systems differ between countries. Often a distinction is made between a compensation policy approach and a reintegration policy approach [12]. In the first approach people receive financial support in case no other means of income are available. It has a broad access to disability benefits, combined with fewer reintegration efforts. The reintegration approach on the other hand focuses primarily on reintegration and has a more restricted access to disability benefits. Providing financial support is not the main goal in this system. Research has shown that such a system has a positive relation with RTW-rates [12,16].

The fourth group of predictors, work characteristics, have been studied most often in relation to sickness absence and the onset of disorders. Yet, relatively few

studies have examined the link between work aspects and RTW except for social support [49,53,54].
Most studies described above have been conducted in populations with specific complaints, and the few studies that did investigate factors that enhance RTW in more than one disorder, found that these factors tended to differ across disorders [16,52]. Therefore, the factors related to RTW are likely to vary across different types of disorders. To facilitate an earlier RTW and design interventions that effectively promote RTW, it is important to gain more insight into the predictors of RTW. Of the interventions that have already been developed to promote RTW, there are indications that multimodal approaches, which combine interventions on health conditions and work-focused interventions, are especially effective in enhancing RTW [e.g., 7,55-57]. Although this shows that there are effective interventions in promoting RTW for employees on sick leave, all these interventions are individually focused. Research has shown that group interventions have several appealing features that may improve their effects, such as cohesion, social support and learning from peers [58-60]. More research on group interventions that specifically focus on RTW is appealing.

## 1.5 Aim of this thesis

As described in the previous paragraphs, both the prevention of sick leave and the promotion of RTW are important due to the high costs of sick leave for several stakeholders and the relevance of sustainable employment. Not only do we need more research on the predictors of both subjects, we also require more theory-based interventions to increase the employability of employees. The main objective of this thesis is therefore to explore which factors influence prevention of sick leave and promotion of RTW as well as to examine what interventions may be effective. This results in four key questions that will be addressed in this thesis:

1. How can mental retirement be defined?
2. What is the effect of a participative action intervention program on reducing mental retirement?
3. What are the predictors of return to work for employees on long-term sick leave?
4. What is the effect of a newly developed group intervention aimed at return to work?

## 1.6 Outline of this thesis

### How can mental retirement be defined and what is the effect of a participative action intervention program on reducing mental retirement?

The first part of the thesis, Chapters 2 and 3, focuses on the prevention of sick leave and explores the concept of mental retirement. In Chapter 2, we aim to further develop and validate the concept and assessment of mental retirement. Next to tests of internal consistency, we perform a confirmatory factor analysis to test the three-factor structure of mental retirement in different subgroups (age, education, occupation). In the next chapter (Chapter 3), the effects of a stepwise, bottom-up participatory program with a tailor-made intervention process addressing the level of mental retirement in a sample of Dutch employees is investigated.

### What are the predictors of return to work for employees on long-term sick leave and what is the effect of a newly developed group intervention aimed at return to work?

The second part of the thesis, Chapters 4 to 6, deals with the promotion of RTW. We examine in a prospective cohort study which factors influence the RTW process in different subgroups. We aim to gain insight in the predictors of full RTW among employees on long-term sick leave due to three different self-reported reasons for sick leave: physical, mental or co-morbid physical and mental problems (Chapter 4). In addition, we investigate the relations between depressive symptoms, work characteristics and duration until full RTW among employees on long-term sickness absence (Chapter 5). Furthermore, in Chapter 6, the design of a new brief evidence-based group intervention for employees on long-term sick leave is described. Participation in this intervention is expected to result in improvement in self-efficacy, resilience against setbacks and in a faster full return to work through the working mechanisms of skill development and motivational enhancement (enhancement of self-efficacy and anticipating setbacks). This new intervention is tested in a mini-pilot within the Dutch police force.

In the final chapter, Chapter 7, we summarize and draw conclusions from our results. We discuss the main strengths and limitations of our research and offer suggestions for future research. In addition, we discuss the theoretical and practical implications of this thesis.

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# 2

# The Concept and Assessment of Mental Retirement[1]

[1] Huijs, J.J.J.M., Houtman, I.L.D., & Blonk, R.W.B. *BMC Public Health,* submitted in 2018. Author Huijs designed the study, collected and analysed the data, interpreted the findings, and wrote the manuscript. Authors Houtman and Blonk co-designed the study, interpreted the findings and edited the manuscript.

## Abstract

**Background:** The aim of this study is to further develop and validate the concept of mental retirement. Employees who are 'mentally retired' are present at their work physically, but have already said their goodbyes mentally. Mental retirement has a three-factor structure: developmental proactivity, work engagement and perceived appreciation.

**Methods:** We use data from employees (*N*=867) of five different organizations in the Netherlands. Next to tests of internal consistency, a confirmatory factor analysis (CFA) is performed to test the three-factor structure of mental retirement in this population and in different subgroups (age, education, occupation).

**Results:** The internal consistency varies from .80 to .94 for the developmental proactivity scale and the work engagement scale, respectively (appreciation was measured with one item). For the confirmatory factor analysis, the three-factor model fits the data adequately. Multiple group analyses also show equal factor loadings in all subgroups, but the mean levels of mental retirement differ across subgroups.

**Conclusions:** This study confirms the three-factor model of mental retirement in a general group of employees as well as across different subgroups. Since sustainable employability is more and more essential in today's society, there is an increasing pressure for maintenance of physical, mental and cognitive abilities of the labor force. The prevention of mental retirement can play an important role in the maintenance of these abilities.

## 2.1 Background

“Why bother, this is yet another change. It doesn’t make any difference”. Or “That new colleague is so exhausting, all those new ideas and methods. Let me just do my work and don’t bother me with all this”. Almost everybody will recognize a colleague in these quotes. Someone who seems to be disconnected from his work and . the organization. A colleague who seems to be counting the hours of each working day and the days until retirement and whose motivation to work has gradually shifted from intrinsic to instrumental. ‘My job’ and ‘my company’ have become ‘that job’ and ‘that company’. Such employees may be described as mentally retired from the organization, while they remain working.
Employees who are ‘mentally retired’ are physically present at their work, but have already said their goodbyes mentally. They appear to invest less in their work, in their employability and development, they don’t want to walk the extra mile anymore and have gradually lost their connection to their job, their colleagues and the organization.
Based on an initial exploration consisting of a literature search, expert meetings, focus groups as well as previously collected data, mental retirement appears to consist of three aspects [1]. Firstly, a decline in interest in learning and developing appears to be an important characteristic of mental retirement. The lack in development may lead to a decline in or even loss of skills, in skills obsolescence, in a decrease in sustainable employment for both the internal labor market of an organization as well as the external labor market or even in job loss [2-4].
Secondly, reduced engagement or reduced motivation was found to be a key aspect of mental retirement. Engaged employees are better connected to their work activities, are more able to deal with the job demands and perform better in their work [5,6]. Less work engagement is related to more sickness absence [7]. This implies that if employees are less engaged, they have a higher risk to lose the connection to their work and their colleagues and therefore have a higher risk to become mentally retired.
The third and final aspect of mental retirement is linked to appreciation. Employees who are ‘mentally retired’ will perceive themselves and their work as less valued or appreciated by either, colleagues, supervisor or the organization as a whole. Employees who perceive more appreciation and have more meaningful work seem to be more committed to their job [8,9].

We believe that mental retirement may have many negative consequences for employees (employability, job satisfaction, fulfillment, etc.), and also for the organization (reduced productivity, quality of work) and the society in general (costs due to early retirement, well-being or even unemployment in the long run).

The concept of mental retirement may become more important since sustainable employability is becoming a more essential and important topic for individuals, organizations as well as society. Therefore it is important to understand the concept of mental retirement better in order to reduce or prevent mental retirement and thereby reducing its negative consequences. In this paper we aim to further test the validity of the concept of mental retirement. First of all this is done by aiming for a replication of its conceptual structure. Second we consider the discriminant validity across different groups of employees. Regarding the latter, age may be such a differentiating employee characteristic. Literature shows that learning attitude changes with age. Older employees are less motivated to try new things and the role and place of work in life changes [10,11]. In addition, older employees are less likely to participate in vocational training or on-the-job training, maintain their working skills and they are also less supported and encouraged to engage in learning activities [12-15]. Not only a decline in learning and developing working skills and knowledge may play a role in older employees, this group of employees may also have a higher risk to become mentally retired since disengagement from work increases when employees get closer to the (planned) retirement age [16]. With regard to the third aspect of mental retirement, appreciation, studies show that particularly for older employees intrinsic job features, such as appreciation from others and meaningful work, matter more to them than extrinsic work outcomes [17,18]. These studies imply that the level of mental retirement may be higher in older employees.

Next to age, the level of mental retirement may differ between employees with different levels of education as well. Lower educated employees participate less often in training than higher educated employees and this training gap has grown in recent years [19]. Less educated employees also appear to be less motivated to participate in training activities [20]. In addition, they are more at risk for low work engagement or high levels of emotional exhaustion [21,22]. They are more triggered by good pay, good job security, good hours, not too much pressure, and generous holidays; whereas highly educated employees look for jobs that are interesting, meet one's abilities and have opportunities for promotion or achieving something [23]. Therefore, we expect a higher level of mental retirement among employees that are less educated.

Besides age and level of education, occupation may play a role as well. Research shows that employees in some occupations, e.g., police officers or nurses, have a higher level of engagement and may also be more intrinsically motivated than employees in other occupations, e.g., blue-collar workers [6,24,25]. A study amongst Dutch police officers also showed that perceived appreciation of co-workers is valued the most [26]. Appreciation by their supervisor, civilians or the society is important as well, but co-workers understand the job better and can better judge whether a police officer performed well. Co-workers especially have an important role in coping with the emotional strains of the job. Therefore, appreciation of co-workers is valued more. In comparison with other

public service employees, police officers feel appreciated and are not unsatisfied with their own organization [26]. So, the level of mental retirement is expected to be lower for service workers, such as police officers, as compared to other occupational groups like office workers, since these studies show a higher level of engagement and appreciation for this first group.

The previous Dutch study [1], which explored mental retirement for the first time in order to define the concept of mental retirement, used panel data of more than 12,000 employees aged 50-64 in the Netherlands. Despite the fact that it was a somewhat older group of employees, an explorative factor analysis confirmed that mental retirement consists of three factors: developmental proactivity, work engagement and perceived appreciation [1].
The current study aims to replicate and extend these earlier findings on assessing mental retirement in a broader population, including employees of younger age, which also varies in educational level and in occupational group.

- **Hypothesis 1:** The three-factor model will also fit a more general group of employees with a much broader distribution of age, education and occupation.

In addition, the previous study hardly addressed whether the distinctiveness of the three factors holds across subgroups. Therefore, in the current study we examine if the three-factor structure is stable across different subgroups.

- **Hypothesis 2:** The three-factor structure will be invariant across subgroups (which differ in age, education and occupation).

However, we expect the mean levels of mental retirement to differ across these subgroups:

- **Hypothesis 3**: The level of mental retirement is higher in older employees (≥50 years) as compared to younger employees.
- **Hypothesis 4:** The level of mental retirement is higher in less educated employees as compared to higher educated employees.
- **Hypothesis 5:** Employees in office jobs have a higher level of mental retirement than service workers like police officers.

## 2.2 Methods

### *2.2.1 Design and procedure*

The research population of this study consisted of a sample of employees of five different public and private organizations in the Netherlands. Three departments of the National Police participated: two departments of police officers and one facility department (respectively *N*=175; *N*=185; *N*=175). The other four organizations were an archive department of the government (*N*=291), a department of the Dutch Ministry of Education that provides student financing (*N*=233), ten

teams from an organization that implements national insurance schemes in the Netherlands (*N*=209) and one team of management assistants of a health technology organization (*N*=63).
Online questionnaires were sent to every employee of the different organizations (*N*=1,331). The questionnaires were sent between March 2014 and October 2015 (depending on when the organization started with the project). These questionnaires were part of a bigger, associated, program that was introduced in the five organizations.

### 2.2.2 Measures

Mental retirement was measured with three concepts (see Appendix 1 for the questionnaire). Firstly, *developmental proactivity* consisted of four items [27]. The response categories ranged from 1 (“totally disagree”) to 5 (“totally agree”). Secondly, six items tapped *work engagement* (derived from the Utrecht Work Engagement Scale (UWES)) [6]. Respondents were asked to describe how often they experienced the described situations (1=never; 7=always). Thirdly, *perceived appreciation* is measured with one question. The response categories ranged from 1 (“not at all”) to 4 (“very much”).

### 2.2.3 Statistical analyses

First, to assess the internal consistency of the three concepts of mental retirement, Cronbach’s alpha was computed for each scale, both in the whole group as well as within each subgroup. Age and occupation were each divided in two subgroups: younger than 50 years; 50 years and older; police officers and office jobs. The facility department of the Dutch police and the teams of the other four organizations can be seen as office jobs. Education was divided in three subgroups: low, intermediate and high level of education.
Second, a confirmatory factor analysis (CFA) with Lavaan, R Package for Structural Equation Modeling [28] was applied to examine the construct validity of mental retirement. Chi-square difference tests ($\chi^2$-test) were used to evaluate the relative fit of the three-factor model. A non-significant value indicates a good fit with the data. However, this index is very sensitive to sample size (significance increasing as sample size increases). Hence, additional fit indices were added. The root mean square error of approximation (RMSEA) and standardized root mean square residual (SRMR) avoid problems with sample size. The RMSEA reflects the extent to which the model fits the population covariance matrix, where an acceptable model fit is reflected by values <0.08 [29]. The SRMR is a standardized summary of the average covariance residuals, and indicates a good fit for values <0.08 [30]. Goodness of fit was therefore also evaluated by using the Tucker-Lewis index (TLI) and the Comparative Fit Index (CFI). The TLI and CFI indices compare the hypothesized model to a ‘null’ or worst fitting model,

taking into account model complexity, and indicate an acceptable model fit for values >0.90, and good model fit with values >0.95 [30].
Three multigroup structural equation models were proposed a priori to compare the factor loadings across age subgroups (<50 years; ≥50 years), educational level (low; intermediate; high level of education) and occupation (police officers; office jobs). In model 1 (baseline model), the factor loadings of the prespecified three-factor model were estimated freely within each subgroup. In model 2 (metric invariance model), the factor loadings were constrained to be equal across the subgroups. Comparison of model 1 to model 2 represents a test of measurement equivalence across subgroups. Differences between the two models are examined with the chi-square difference test and the ΔCFI. Changes in CFI values of 0.01 or less are indicative of factor invariance across the groups [31].

## 2.3 Results

In total 867 (65%) employees filled out the questionnaire. The mean age of the participants was 46.7 years (see Table 1) and most were male (54.4%). Most participants worked fulltime (69%) and have been working almost 14 years within the current organization. Table 1 also shows differences in baseline characteristics between the subgroups within the variables age, education and occupation. Employees of 50 years and older and employees who are lower educated are more often male and are working longer in their organization and in their function. Police officers are younger, more often male, lower educated, more often work fulltime or less than 12 hours and are working longer in their organization than employees with office jobs.

Table 1 Baseline characteristics of the participants

| | | Age | | Education | | | Occupation | |
|---|---|---|---|---|---|---|---|---|
| | **Total** | <50 year | ≥50 year | Low | Intermediate | High | Police officers | Office jobs |
| *N* | 867 | 449 | 380 | 176 | 408 | 257 | 230 | 637 |
| % | 100% | 54% | 46% | 21% | 49% | 31% | 27% | 73% |
| **Age** | | | | | | | | |
| Mean | 46.7 | 38.1▼ | **56.9▲** | 46.3 | 47.3 | 45.9 | 40.4▼ | **48.9▲** |
| SD | 11.1 | 7.12 | 4.31 | 11.7 | 11.0 | 11.0 | 11.1 | 10.2 |
| **Gender** | | | | | | | | |
| Male | 54.4% | 49.4%▼ | **59.5%▲** | 65.9%▲ | 56.9% | 42.4%▼ | **70.3%▲** | 48.8%▼ |
| Female | 45.6% | **50.6%▲** | 40.5%▼ | 34.1%▼ | 43.1% | **57.6%▲** | 29.7%▼ | **51.2%▲** |
| **Education** | | | | | | | | |
| Lower | 20.9% | 20.7% | 20.1% | 100% | -- | -- | 41.6%▲ | 13.7%▼ |
| Intermediate | 48.5% | 46.1% | 51.7% | -- | 100% | -- | 53.0% | 46.9% |
| High | 30.6% | 33.2% | 28.2% | -- | -- | 100% | 5.5%▼ | **39.4%▲** |
| **Working hours per week** | | | | | | | | |
| ≥35 hours | 69.0% | 70.4% | 67.6% | 68.2% | 69.9% | 68.1% | 74.9%▲ | 66.9%▼ |
| 20-34 hours | 28.7% | 27.8% | 29.7% | 27.8% | 28.2% | 30.4% | 21.5%▼ | 31.3%▲ |
| 12-19 hours | 1.4% | 0.9% | 1.8% | 2.3% | 1.2% | 1.2% | 0.9% | 1.6% |
| <12 hours | 0.8% | 0.9% | 0.8% | 1.7% | 0.7% | 0.4% | **2.7%▲** | 0.2%▼ |
| **Years working at organization** | | | | | | | | |
| Mean | 13.7 | 10.0▼ | **18.1▲** | 15.5▲ | 14.5 | **11.3▼** | **15.3▲** | 13.1▼ |
| SD | 11.3 | 6.79 | 13.8 | 11.9 | 11.7 | 10.0 | 10.9 | 11.4 |
| **Years working in function** | | | | | | | | |
| Mean | 6.26 | 5.05▼ | **7.66▲** | 7.13▲ | 6.76▲ | **4.89▼** | 6.48 | 6.18 |
| SD | 6.43 | 4.56 | 7.89 | 7.36 | 6.64 | 5.15 | 6.59 | 6.38 |

▲ and ▼: p<0,05, significant high (low) percentages and/or means.

The three factors of mental retirement are correlated, but they are also clearly distinct from each other (see Table 2). Table 2 also displays the scores on mental retirement for the whole group.

Table 2 Scores on mental retirement and Pearson correlation (*N*=848-853)

| | Total | | Pearson correlations | | |
|---|---|---|---|---|---|
| | M | SD | Develop-mental proactivity | Work engagement | Perceived appreciation |
| Developmental proactivity [Range: 1-5] | 4.14 | 0.59 | - | .43** | .30** |
| Work engagement [Range: 1-7] | 4.86 | 1.30 | | - | .48** |
| Perceived appreciation [Range: 1-4] | 2.51 | 0.80 | | | - |

**p<.01 (2-tailed).

The internal consistency for the developmental proactivity scale and the work engagement scale was very good (overall and within group are presented in Table 3). The Cronbach's alfa of the developmental proactivity scale varied between .80 and .88. For work engagement the internal consistency was consistent with .94 in the whole population as well as in every subgroup. Perceived appreciation was measured with one item and therefore no internal consistency could be calculated.

Table 3 Cronbach's alfa for mental retirement

| Subgroup | *N* | Cronbach's alfa (α) Developmental proactivity | Cronbach's alfa (α) Work engagement |
|---|---|---|---|
| Whole group | 848-853 | .85 | .94 |
| Male | 451 | .85 | .94 |
| Female | 376-378 | .84 | .94 |
| <50 year | 444 | .82 | .94 |
| ≥50 year | 372-374 | .88 | .94 |
| Police officers | 223-224 | .80 | .94 |
| Office jobs | 625-629 | .86 | .94 |

The CFA shows that the three-factor model appeared to fit the data adequately (confirmation hypothesis 1). The Chi-square difference test, however, was significant (see Table 4). This apparent lack of fit is not surprising, because very small differences between expected and observed correlations in large samples can lead to a significant $\chi^2$-test [31]. The other goodness-of-fit indices showed

good fit (CFI; TLI >.90 and SRMR <.08), except the RMSEA score, which was relatively high with 0.11.

Table 4 Goodness-of-fit indices for the mental retirement model (*N*=853)

| | $\chi^2$ | df | CFI | TLI | RMSEA | SRMR |
|---|---|---|---|---|---|---|
| Whole group | 484.72 | 42 | .93 | .91 | .11 | .03 |

Multiple group analyses examined the invariance of the three-factor model across subgroups. All multiple group analyses revealed (see Table 5) that the chi-square tests are not significant and the ΔCFI is smaller than or equal to the proposed cutoff point of .01 [31]. This indicates that the factor loadings can be assumed equal in all subgroups and hypothesis 2 is confirmed.

Table 5 Goodness-of-fit indices for the subgroups of the mental retirement model (*N*=853)

| | $\chi^2(\Delta\chi^2)$ | df (Δf) | p (Δp) | CFI (ΔCFI) |
|---|---|---|---|---|
| **Age** | | | | |
| Model 1 | 584.95 | 84 | <.001 | .923 |
| Model 2 | (4.81) | (8) | (.78) | (.000) |
| **Education** | | | | |
| Model 1 | 591.65 | 126 | <.001 | .927 |
| Model 2 | (21.66) | (16) | (.15) | (.001) |
| **Occupation** | | | | |
| Model 1 | 556.44 | 84 | <.001 | .927 |
| Model 2 | (14.54) | (8) | (.07) | (.001) |

In addition, the mean scores of mental retirement in the different subgroups were assessed. No differences in levels of developmental proactivity, work engagement and perceived appreciation were found for age, so hypothesis 3 is rejected. However, some differences were found across educational levels. Higher educated employees report higher levels of developmental proactivity and perceived appreciation as can been seen in Table 6. In addition, the scores of work engagement are higher for lower educated employees. Consequently, hypothesis 4 is partly confirmed. Hypothesis 5 is also partly confirmed, since police officers are more engaged than employees with office jobs. But no differences were found in levels of developmental proactivity or perceived appreciation across occupation groups.

Table 6 Scores on mental retirement in the subgroups

| | | Age | | Education | | | Occupation | |
|---|---|---|---|---|---|---|---|---|
| | **Total** | <50 year | ≥50 year | Low | Intermediate | High | Police officers | Office jobs |
| *N* | 853 | 444 | 374 | 167 | 404 | 257 | 224 | 629 |
| % | 100% | 54% | 46% | 20% | 49% | 31% | 26% | 74% |
| **Developmental proactivity [Range: 1-5]** | | | | | | | | |
| Mean | 4.14 | 4.18 | 4.10 | 4.12 | 4.11 | **4.23▲** | 4.15 | 4.14 |
| SD | 0.59 | 0.56 | 0.63 | 0.63 | 0.59 | 0.56 | 0.51 | 0.62 |
| **Work engagement [Range: 1-7]** | | | | | | | | |
| Mean | 4.86 | 4.82 | 4.88 | **5.55▲** | 4.72▼ | 4.63▼ | **5.51▲** | 4.63▼ |
| SD | 1.30 | 1.31 | 1.30 | 1.45 | 1.24 | 1.15 | 1.12 | 1.28 |
| **Perceived appreciation [Range: 1-4]** | | | | | | | | |
| Mean | 2.51 | 2.50 | 2.51 | 2.57 | **2.39▼** | 2.66▲ | 2.52 | 2.50 |
| SD | 0.80 | 0.79 | 0.83 | 0.91 | 0.73 | 0.81 | 0.77 | 0.81 |

▲ and ▼: p<0,05, significant high (low) means.

## 2.4 Discussion

First of all, the current study examined the structure of mental retirement using confirmatory factor analysis. The results of this study on a population which considerably varied in age, educational level and occupational group confirmed the three-factor model of mental retirement which consists of developmental proactivity, work engagement and perceived appreciation. In addition, multiple group analyses showed equal factor loadings in all subgroups implying the three-factor model was stable across subgroups (age (<50 years; ≥50years), level of education (low, intermediate, high) and occupation (police officers and office jobs)). These findings replicate the earlier finding of Sanders et al. [1] but now in a more heterogenous population, as well as within subgroups that were hypothesized to differ in the subcomponents of mental retirement. This adds to the validity of the concept of mental retirement.

Secondly, it was shown that the mean levels of mental retirement did indeed differ across educational level and occupational group, but not across different age groups. Higher educated employees reported a higher level of developmental proactivity and perceived appreciation, but lower levels of engagement. These differences in developmental proactivity and appreciation may be found because higher educated employees participate more often in training and are more motivated to participate in training activities [19,20]. However, contrary to our expectations lower educated employees showed higher levels of work engagement than intermediate or higher educated employees. This is not in line with previous research [21,22]. In the present study we checked the relation between educational level and occupation. These analysis showed that the group of lower educated employees proportionally includes more police officers and this group reports a higher level of work engagement in comparison with employees with office jobs. This is in line with previous research that has shown that police officers have a higher level of engagement [6,24,32]. The fact that police officers are highly engaged may have caused the unexpected finding of lower educated employees reporting a higher level of work engagement. The two other aspects of mental retirement appear not to differ across occupational groups. Although an earlier study among Dutch police officers showed that perceived appreciation of co-workers is valued most [26], in the present study there appear to be no differences in level of perceived appreciation across occupational groups. This may be explained by the way appreciation was measured in our study, since we only asked if employees feel appreciated in their current job and no distinction was made in the source of that appreciation. These findings suggest that the concept of mental retirement is more prevalent for lower educated (as compared to middle and higher educated employees), and that the concept is also more prevalent for office workers as compared to police officers. Although

tempting, this study does not generalize the latter finding to all service workers, or to a specific group of (higher educated) service workers.

This study also shows that the concept of mental retirement may be as important in younger employees as in older employees near the end of their work life. Although studies show that older employees participate less in training and maintenance of their working skills [12-15], the level of developmental proactivity doesn't appear to decrease with age in our study. A study on lifelong learning in the Netherlands shows that there may be a trend shift over time with regard to training participation [19,33]. In 2004, training participation clearly declined with age, but data from 2010 indicate that training participation remains stable. Our findings also show that the level of work engagement and perceived appreciation may not decrease with age. The fact that we did not find differences between age groups may be due to the fact that the age of 50 is still a rather high age. It may be that more differentiation is needed. In addition, studies also report that age may be important for mental retirement, but should be considered in interaction with job characteristics such as the meaningfulness of the work. The importance of meaningful work, development opportunities and being appreciated have been shown to increase with age of retirement [18,34]. The impact of these interaction effects may be best studied when including (perceived) job characteristics and outcome variables, such as health outcomes, sickness absence or actual exit from the job. Age may still be important in relation to mental retirement, but should be considered in relation to job characteristics such as perceived meaningfulness of the work or job to the employee.

The current study established that mental retirement has a steady structure in a broader population and across different subgroups. The concept of mental retirement may become more important since sustainable employability is becoming a more essential and important topic for individuals, organizations as well as society. The life expectancy of people is getting higher due to lower birth rates as well as a decline in mortality rates, and the official pension age is increasing too [33,35]. This is reflected in the rapid ageing of the working population [33]. The average age of employees in the Netherlands was 36.2 years in 1990; in 2000 it increased to 38.3 years, and in 2014 it has further increased to 41.9 years [36]. The effective retirement age has also increased considerably in the past decade in the OECD countries (Organisation for Economic Co-operation and Development): from 63.3 years for males and 61.3 years for females in 2002 to respectively 64.2 and 63.1 years in 2012 [33]. Therefore, there is an increasing pressure for maintenance of physical, mental and cognitive abilities of the labor force. The prevention of mental retirement can play an important role in the maintenance of these abilities.

When interpreting the findings of this study, some limitations should be kept in mind. First, this article focuses only on the structure of mental retirement and did not involve possible determinants or effects of mental retirement. This was not the aim of the present study and did not fit the data structure used for the purpose of this study. This study only tested the construct validity and no antecedent nor outcome variables were included. The causal chain of antecedent variables to mental retirement and its outcomes should preferably be studied in a longitudinal design. Secondly, one of the subcomponents of mental retirement, perceived appreciation, was measured with only one item and therefore the reliability and validity of this component is limited. Thirdly, although this study used a different and broader sample than the previous study [1], the sample used here is still a restricted sample. Thus, there is a further need for replication of studies on the concept of mental retirement. Future research should be longitudinal in nature and study factors that may cause mental retirement, as well as relevant outcomes of this state. These studies could also focus on interventions that impact on 'developmental proactivity', 'work engagement' and 'perceived appreciation' in preventing or decreasing the level of mental retirement in organizations.

## 2.5 Conclusions

This study clearly shows that the three-factor model of mental retirement, which consists of developmental proactivity, work engagement and perceived appreciation, is confirmed in a general group of employees as well as across different subgroups of age, level of education and occupation. Since sustainable employability is more and more essential in today's society, there is an increasing pressure for maintenance of physical, mental and cognitive abilities of the labor force. The prevention of mental retirement may play an important role in the maintenance of these abilities.

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# Appendix 1 Questionnaire of mental retirement

## Items of mental retirement

**Developmental proactivity**

1. In my work, I keep trying to learn new things.
2. I think about how I can keep doing a good job in the future.
3. In my work, I search for people from whom I can learn something.
4. With regard to my skills and knowledge, I see to it that I can cope with changes in my work.

**Work engagement**

1. At my work, I feel bursting with energy.
2. At my job, I feel strong and vigorous.
3. I am enthusiastic about my job.
4. My job inspires me.
5. When I get up in the morning, I feel like going to work.
6. I am proud on the work that I do.

**Perceived appreciation**

1. Do you feel appreciated in your current job?

# 3

# Effect of a Participative Action Intervention Program on Reducing Mental Retirement[1]

[1] Huijs, J.J.J.M., Houtman, I.L.D., Taris, T.W., & Blonk, R.W.B. (2019). *BMC Public Health, 19*:194. https://doi.org/10.1186/s12889-019-6522-x. Author Huijs designed the study, collected and analysed the data, interpreted the findings, and wrote the manuscript. Authors Houtman, Taris and Blonk co-designed the study, interpreted the findings and edited the manuscript.

## Abstract

**Background:** The present study aimed to investigate the effects of a stepwise, bottom-up participatory program with a tailor-made intervention process addressing the level of mental retirement in a sample of Dutch employees. Mental retirement refers to feelings of being disconnected from your work and your organization. Prevention of mental retirement is important since sustainable employability is becoming more important in today's society due to the ageing of the working population and the changes in skills demands.

**Methods:** This prospective cohort study with a one-year follow-up employs a sample of 683 employees of three organizations in The Netherlands, who filled out two questionnaires: at baseline and one year later. The dependent measure was mental retirement, which consists of three sub-concepts: developmental pro-activity, work engagement and perceived appreciation.

**Results:** Multilevel analysis (*N*=466) showed that employees who more actively participated in the intervention(s) had a small but statistically significant larger decrease in mental retirement at follow-up.

**Conclusions:** The stepwise, bottom-up participatory program with a tailor-made intervention process shows a tendency to decrease the level of mental retirement in Dutch employees. However, the implementation of interventions could be further improved since it turned out to be very challenging to keep up participants' commitment to the program. Future research should study the effectiveness of this program further with an improved study design (control group, multiple follow-ups, several data sources).

## 3.1 Background

Sustainable employability - referring to employees' capacities to function in work throughout their working life - has become an important issue in the last decades [1,2]. Two major developments are responsible for this increased attention. First, due to technical developments, globalization and innovations, skills demands and the labor market are rapidly changing [3,4]. Organizations need to be more flexible and adaptable, which requires other competencies from employees than before. This causes employees' skills to become obsolete and endangers their sustainable employability. Second, the Dutch working population is rapidly ageing due to lower birthrates, a decline in mortality rates, and an increase in official pension ages [5,6]. The average age of employees in the Netherlands was 36.2 years in 1990; in 2000 it had increased to 38.3 years, and in 2014 it had further increased to 41.9 years [7]. The effective retirement age has also increased considerably in the Netherlands. In the beginning of this century the effective retirement age was just below 61 years, in 2017 this had increased to almost 65 years [7].

These two developments lead to an increasing pressure for maintenance of physical, mental and cognitive abilities of the labor force to ensure that employees remain employable, stay healthy, motivated, competent and productive at least until the age or retirement [1,2]. The prevention of *mental retirement* can play an important role in the maintenance of these abilities [8]. Employees who are mentally retired are disconnected from their work and from the organization. Compared to others, they invest less in their work, their employability and development, and they have gradually lost their connections with their job, their colleagues and the organization.

### *3.1.1 The concept of mental retirement*

Previous studies show that mental retirement consists of three factors: developmental pro-activity, work engagement and perceived appreciation [8,9]. An indifference to learning and development can result in a decline, or even loss of skills, in skills obsolescence, a decrease in sustainable employment for both the internal labor market of an organization as well as the external labor market or it can even result in job loss [3,4,10]. Furthermore, engaged employees are better connected to their work, cope more effectively with job demands and perform better in their work [11,12], while lower engagement is related to more sickness absence [13]. In addition, more perceived appreciation is linked to more job commitment [14,15].

In the literature the concept of mental retirement has been mentioned before [e.g. 16,17]. However, in these earlier studies mental retirement has a rather different definition in which it is specifically linked to actual retirement and age. Mental retirement is defined for example as the cognitive decline that seems to occur after actual retirement [16]. This decline is caused by a lack of cognitive stimulation and mental exercise, which occurs when someone is retired as well as when an employee is still working but has the prospect of nearby early retirement. In another study mental retirement is defined as a decrease in work engagement for employees who are facing actual retirement [17]. However, this study finds no support for this relation.
Another related concept that is also linked to age, is the 'older worker identity'. This refers to the internalization of negative attitudes and beliefs regarding the older worker, mostly based on stereotypes (e.g. low motivation, resistance to change, inflexibility and lack of interest in learning) [18,19]. This internalization can be caused by discrimination in career opportunities and feelings of deprivation in comparison to others. Older worker identity is positively related to full retirement and negatively to late retirement, job mobility and development opportunities on the job [19,20].
In contrast to the concept of older worker identity and the definitions mentioned earlier on mental retirement, mental retirement is not necessarily connected to age since a previous study showed no differences in the level of mental retirement in different age groups [8]. Although studies show that older employees participate to a lesser degree in training and maintenance of their working skills [21-24], a study on lifelong learning in the Netherlands shows that there may be a trend shift over time with regard to training participation [5,25]. In the past, training participation clearly declined with age, but data from 2010 indicates that training participation remains stable. In addition, studies have shown that the importance of meaningful work, development opportunities and being appreciated increases with age of retirement [26,27].

Although mental retirement is a fairly new concept and more research is needed to study the predictors and effects of mental retirement, there are indications that it might have negative consequences for employees (e.g. lower job satisfaction and mental health), and therefore also for the organization (reduced productivity, absenteeism, profit loss) and society in general (costs due to early retirement, well-being) [3,9,13,28,29]. Thus, it appears important that mental retirement among workers is prevented or reduced as much as possible. Therefore, an organizational program was developed to reduce mental retirement.

### *3.1.2 Important features of an organizational program in general*

Research has shown there are several features that are important in order for organizational programs or interventions to be effective. First, a tailor-made approach is necessary. Tailoring improves the utilization of the results, helps to choose the interventions that meet the specific needs of the team or organization and make effective action plans [30-32]. However, this approach is not easy to implement or evaluate since it means that it is impossible to develop a single intervention that will be effective in every organization or team. Second, previous research has also shown that a stepwise approach is effective by providing a framework for organizations that can be used to make suitable choices for interventions [31]. This stepwise approach often consists of five basic steps that are specified for each program: 1) raising awareness and creating commitment in an organization, 2) problem assessment, 3) prioritizing, choosing interventions and making an action plan, 4) implementation of the chosen intervention(s), and 5) evaluation of the process and effects [30,33]. A third important feature is a participatory approach. Research has shown that the use of participatory action research is very successful for occupational health interventions [31,33-35]. By using the knowledge, skills and perceptions within the team (of the employees as well as the supervisors/management), a feeling of joint ownership is created during the program. Participants feel more in control and experience a greater sense of fairness and justice. Thereby, not only is awareness created but also a joint responsibility for both the problems as well as the solutions for these problems. In addition, the participation can also decrease the resistance to change and smoothen the change process [33,36,37].

Next to the features of an organizational program the research design is also very important, especially in applied research. Although a randomized controlled trial (RCT) is often considered as the golden standard, this is not always feasible. Particularly in applied occupational health research, the interventions and the context are often complex and therefore hard to control [38-41]. Therefore, in applied research quasi-experiments with a control and intervention group are often difficult to establish and complete in a satisfactory way. Additionally, even if a RCT is performed with success, the question remains whether the conclusions can be generalized to other organizations and individuals or that the results only apply for a selected sample of individuals [40,42]. Using process evaluation and incorporating the measurement of intervention exposure in participants' samples is an alternative way to cope with these problems [38,41]. Data on exposure to the intervention can easily be obtained in an intervention process evaluation by asking participants about their experiences and exposure. This information can then be used to determine whether each participant is more appropriately placed in an intervention/exposed group or a control/not exposed group. This approach makes it possible to take into account the complex, chaotic and uncontrollable organizational settings.

### 3.1.3 The present study: The design of the mental retirement program

To address the issue of mental retirement, a bottom-up program was designed based on the principles of a participatory, stepwise, tailor-made approach. The program consists of five steps (see Fig. 1). The program is carried out by the whole team, i.e., employees and supervisors together. In the first step, a representative delegation of the team participates in *mindmapping sessions*. Two sessions are held with 10-20 participants each. These sessions are each led by two facilitators. At least one of the facilitators is a researcher, the other can also be a researcher or an employee of the organization that is trained in the mental retirement program. The sessions have two goals. First, these sessions create awareness of mental retirement within the team and gain acceptance for the program and the possible changes it may bring. Secondly, the information gained during the sessions is used to tailor the model of mental retirement with organization-specific concepts and to adjust the basic questionnaire accordingly. In the mindmapping sessions the employees and supervisors discuss what they believe mental retirement is and what the predictors and effects are of mental retirement. To not only create awareness but to also set people in motion, the participants contemplate on possible actions for themselves, their supervisor and the organization to decrease mental retirement. The employees who participate in the mindmapping sessions are contacted by management or the HR-professional of the department who invite them to participate. Participation is voluntary. The employees that are approached are selected so that they represent the entire department with regard to age, sex, function, time employed and level of mental retirement (as estimated by the manager or HR-professional). Furthermore, in this stage a project group of approximately six people is created, which consists of several employees of the team, a HR-professional and sometimes the supervisor or manager. The team itself decides who will join this project group and participation is voluntary. The project group is the first point of contact for the researchers as well as for all the employees in the department.

In the *diagnostic phase*, the basic model of mental retirement is tailored to the team with the input of the mindmapping sessions. Where necessary questions are added to the basic questionnaire. This questionnaire is available in an online portal for all the team members to fill out.

In a tailor-made intervention process, step 3, the team *chooses the interventions* that they want to implement in order to decrease mental retirement in their team. Each team chooses their own intervention(s), so these may differ between teams. The interventions are selected based on the results of the baseline questionnaire as well as their fit with the team in terms of process and culture. First a pre-selection is made by the project group in one session. Next, the team results of the baseline questionnaire and the pre-selection of interventions are presented in two interactive sessions. In these sessions the team members formulate an action plan for the implementation of the interventions they agree with.

When necessary, they select or design new interventions. The participants in these sessions are the same as those who participated in the mindmapping sessions. The results of the questionnaire and the action plan are distributed across the rest of the team in a way the project group sees fit.
In the next step, the organization is in charge and the role of the researchers is marginalized. The team starts to *implement the interventions*. The selected interventions do not necessarily start all at once, but are spread out through time. There needs to be enough time for carrying out the action plan and for the interventions to take place and have effect. Therefore, the duration of this implementation step takes approximately six to nine months.
In the fifth and final step, the program is *evaluated*. In consultation with the project group and based on the implementation process of the interventions, the timing of the follow-up questionnaire is determined. Approximately one year after the start of the intervention (step 1), an online follow-up questionnaire is made available in the portal to evaluate the effects of the program. The questionnaire is largely the same as the baseline questionnaire, but also includes questions regarding the interventions that were implemented.

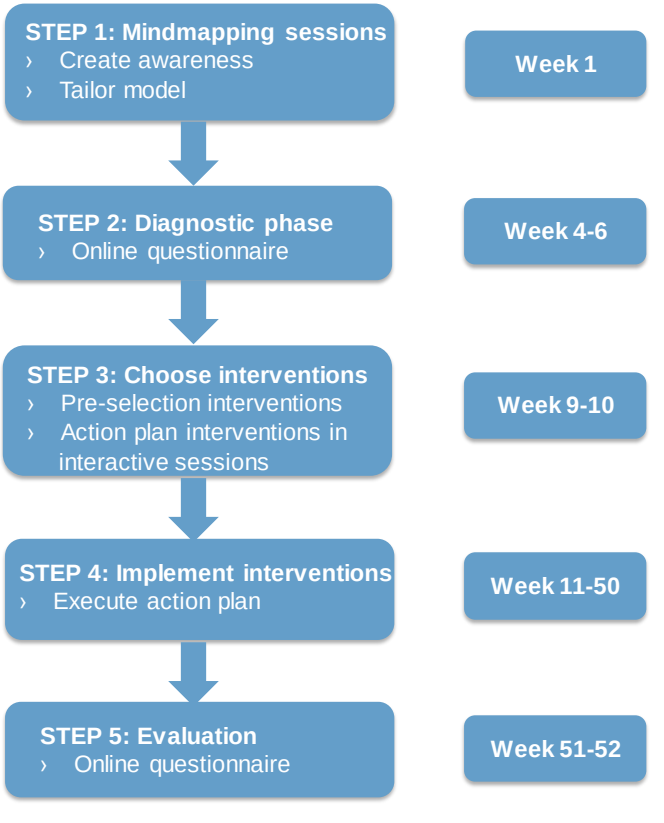


Figure 1 Mental retirement program

The current study aims to explore the effects of this mental retirement program in a broad population of employees within several organizations. The effect of the program as a whole is examined, rather than the effects of the specific interventions that are implemented in step 4 of the program. As each team or department chooses their own interventions, the range of interventions is very wide which makes it difficult to examine the effects of each intervention separately. In addition, we believe that the effect of our program is due to the program as a whole (all 5 steps) and not so much to the specific interventions of step 4.

- **Hypothesis 1:** the level of mental retirement will decrease between baseline and follow-up, due to the mental retirement program as a whole and independent of the specific interventions that are implemented in step 4.
- **Hypothesis 2:** the improvement in mental retirement will be stronger for employees who actively participated in the interventions than for those who participated to a lesser degree.

## 3.2 Methods

### *3.2.1 Design and procedure*

The research population of this study consisted of a sample of employees of five departments of three different organizations in the Netherlands. Three departments of the Dutch National Police participated: two departments of police officers and one facility department (*N*=175; *N*=185; *N*=175, respectively). The other two organizations were an archive department of the Dutch government (*N*=291) and one location of a non-profit organization that implements national insurance schemes in the Netherlands (*N*=209). The reasons for participating in this study differed across organizations and teams, but included issues such as minimizing the effects of a reorganization, creating more awareness among employees regarding their own development, getting employees out of ‘sleep mode’ to prevent them from getting stuck in their career.
Online questionnaires were sent to every employee of all departments (*N*=1,035) in step 2 (baseline measurement) and step 5 (evaluation). The baseline questionnaires were sent between March 2014 and October 2015 (depending on when the organization started with the program). The follow-up questionnaire was sent out approximately one year after the baseline questionnaire.

### *3.2.2 Measures*

Mental retirement was measured with three concepts [8]. Firstly, *developmental pro-activity* consisted of four items [43]. An example item is: “I think about how I can keep doing a good job in the future”. The response categories ranged from

1 (“completely disagree”) to 5 (“completely agree”). The internal consistency in our study (Cronbach's alpha) was .85. Secondly, *work engagement* was measured with six items (three items on vigor and three items on dedication) from the Utrecht Work Engagement Scale (UWES) [44], including “My job inspires me” (α = .94). Respondents were asked to describe how often they experienced the described situations (1=never; 7=always). Thirdly, *perceived appreciation*, is measured with one question: “Do you feel appreciated in your current job?”. The response categories ranged from 1 (“not at all”) to 4 (“very much”). The scale scores of the three mental retirement sub-concepts were standardized (into scores between 0 and 1) because their response categories differed. A mean score was calculated over these three sub-concepts, which created a variable that measured mental retirement in one variable (range 0 to 1; α = .64).
In the follow-up questionnaire measures of *intervention exposure* were included. Respondents were asked if they were familiar with each intervention (0=”no”, 1= “yes”) and if so, to what extent they had participated in the specific intervention(s) which were chosen and implemented at their workplace (1= “not”, 5= “very much”). For each respondent the intervention exposure was calculated: a sum score was made of the number of interventions in which they had participated (very) much, divided by the maximum number of interventions they could participate in.

### 3.2.3 Statistical analysis

Missing values were imputed using multiple imputation procedures in the SPSS “Missing Values” module, based on an iterative Markov chain Monte Carlo (MCMC) method. Overall data missingness was 31.5%, mainly due to dropout at follow-up and not filling out the questionnaires completely. It has been shown that multiple imputation-based procedures are superior to case-wise deletion of missing data [45]. In our analyses, only data were used that did not have imputed data on the variable intervention exposure. The resulting data set comprised 466 members of five departments.
Multilevel modelling (MLM) [46] was used to study our hypotheses and analyze our data, which were nested at the organizational level. The MLM analyses were performed in SPSS version 25.0 Multilevel modelling (i.e. hierarchical linear model) which aims to analyze data that contains an inherent hierarchical structure [47]. In the present study the data contains two levels. The first of lowest level of the data contains individual scores of mental retirement at baseline and follow-up (within-subject level). At the second level the individuals are nested into departments (between departments). In a stepwise procedure a final model was built for each outcome. First, the presence of a random intercept was tested for each outcome, indicating whether departments have different intercepts. In the second step, the presence of a random slope was tested for each outcome measure, indicating whether departments differed in the way their mental retire-

ment changes over time. In the final step, educational level was added as a covariate to the best-fitting model.[2] For the first hypothesis, difference scores (between baseline and follow-up) were calculated for each outcome and used as dependent variable, making the intercept of the model an indicator for the change in the outcome from baseline to follow-up. For the second hypothesis, the dependent variable was the follow-up measurement. In the final step of the analysis, the baseline measurement of the outcome and the intervention exposure (the extent employees had participated in the specific intervention(s) in their team) were added. Variables in the equation were not centered, because all included variables had interpretable zero values. The intraclass correlation coefficient (ICC) was calculated to obtain the amount of variance explained by the differences between departments.

Besides the quantitative results, also qualitative results are reported. The researchers monitored the context and setting of each department and kept track in a digital logbook. In the logbook, the sequence of planned and unplanned events was listed alongside impressions of the researchers. These impressions were based on their own observations during the sessions. At the end of each session the researchers shortly evaluated the sessions by asking the opinion of the participants. In addition, the impressions of the researchers are based on their periodical contacts with the project group. In these contacts, the project group informed the researchers on their observations as well as the progress made. Furthermore, the researchers logged all changes that occurred in the context or setting of the organizations. The logbook was kept up to date throughout the duration of the study. The logbook data were grouped per department to form a chronological list of events, including the impressions of the researchers. The qualitative results will be discussed in accordance with the five steps of the program.

## 3.3 Results

In total 683 (66.0%) employees filled out (part of) the baseline questionnaire and just over 400 (39.5%) participants filled out (part of) both questionnaires (see Table 1 for response-rates within each department).[3] The mean age of the participants was 45.8 years (see Table 2) and most were male (60.3%) and had an intermediate level of education (50.6%). Most participants worked fulltime (69.6%) and had been working on average almost 13 years within their current

[2] A model of random intercepts was best-fitting for all outcomes. A random slopes model did not fit any outcome variable best.

[3] No significant differences on baseline levels of mental retirement and its components were found between drop-outs (only filled out the baseline questionnaire) and employees who filled out both questionnaires.

organization. Table 2 also displays the scores on mental retirement and its sub-concepts at baseline.

Table 1 Response-rate within each department

| Department | Number of employees | Number of respondents at baseline (%) | | Number of respondents at follow-up (%) | | Number of respondents overall* (%) | |
|---|---|---|---|---|---|---|---|
| Police officers department 1 | 175 | 128 | (73.1) | 121 | (69.1) | 86 | (49.1) |
| Police officers department 2 | 185 | 102 | (55.1) | 54 | (29.2) | 32 | (17.3) |
| Facility department police | 175 | 102 | (58.3) | 73 | (41.7) | 49 | (28.0) |
| Archive department | 291 | 196 | (67.4) | 194 | (66.7) | 141 | (48.5) |
| National insurance schemes department | 209 | 155 | (74.2) | 128 | (61.2) | 101 | (48.3) |
| **Total** | **1,035** | **683** | **(66.0)** | **570** | **(55.1)** | **409** | **(39.5)** |

* Based on employees who filled out (part of) both questionnaires.

### *3.3.1 Quantitative results*

Table 3 displays the effect of the program on mental retirement and its sub-concepts. Since none of the intercepts are significant, the level of mental retirement does not change between baseline and follow-up. Therefore, hypothesis 1 is rejected.

In Table 4 the results of the multilevel analyses that take the level of intervention exposure into account are shown for each outcome. There is a significant effect of intervention exposure on mental retirement. Employees who were more exposed to the intervention(s) (i.e. who more often participated (very) much in the intervention(s)), had a slightly lower level of mental retirement at follow-up. This effect was also found for two of the sub-concepts of mental retirement; developmental pro-activity and work engagement. For perceived appreciation only a tendency was found. These results show that active participation in the intervention(s) is related to a decrease of mental retirement, which is in line with hypothesis 2.

Table 2 Baseline characteristics of the participants

| Variable | | Percentage or Mean/SD |
|---|---|---|
| Gender (*N*=667) | Male | 60.3% |
| | Female | 39.7% |
| Education (*N*=666) | Lower | 26.1% |
| | Intermediate | 50.6% |
| | Higher | 23.3% |
| Working hours per week (*N*=667) | >= 35 hours | 69.6% |
| | 20 - 34 hours | 28.0% |
| | 12 - 19 hours | 1.3% |
| | < 12 hours | 1.0% |
| Age (*N*=654) | Mean | 45.8 |
| | Standard Deviation | 11.4 |
| Years working at organization (*N*=683) | Mean | 12.8 |
| | Standard Deviation | 10.9 |
| Years working in job (*N*=683) | Mean | 6.7 |
| | Standard Deviation | 6.9 |
| Mental retirement (*N*=403) | Mean | .36 |
| | Standard Deviation | .16 |
| Developmental pro-activity (*N*=409) | Mean | 4.12 |
| | Standard Deviation | .59 |
| Work engagement (*N*=403) | Mean | 4.83 |
| | Standard Deviation | 1.33 |
| Perceived appreciation (*N*=403) | Mean | 2.46 |
| | Standard Deviation | .78 |
| Intervention exposure (*N*=466) | Mean | .19 |
| | Standard Deviation | .25 |

Table 3 Effect of the program on the difference scores of mental retirement and its sub-concepts (*N*=466)

| | Mental retirement | | Developmental pro-activity | | Work engagement | | Perceived appreciation | |
|---|---|---|---|---|---|---|---|---|
| | B (95% CI) | | B (95% CI) | | B (95% CI) | | B (95% CI) | |
| Intercept | .00 | (-.04-.04) | -.05 | (-.20-.11) | .10 | (-.16-.36) | -.01 | (-.21-.20) |
| Lower education | -.01 | (-.05-.04) | -.06 | (-.25-.13) | -.05 | (-.37-.27) | .12 | (-.14-.37) |
| Intermediate education | -.01 | (-.04-.03) | .06 | (-.09-.21) | -.00 | (-.26-.26) | .03 | (-.18-.27) |
| ICC | .03 | | .03 | | .02 | | .02 | |

Table 4 Effect of the program on mental retirement and its sub-concepts at follow-up, factoring in the level of intervention exposure (*N*=466)

| | **Mental retirement** | | **Developmental pro-activity** | | **Work engagement** | | **Perceived appreciation** | |
|---|---|---|---|---|---|---|---|---|
| | B (95% CI) | | B (95% CI) | | B (95% CI) | | B (95% CI) | |
| Intercept | .17** | (.12-.21) | 2.50** | (2.10-2.90) | 1.86** | (1.39-2.34) | 1.41** | (1.10-1.71) |
| Baseline[a] | .54** | (.46-.61) | .39** | (.30-.48) | .62** | (.55-.70) | .44** | (.35-.53) |
| Intervention exposure | -.07** | (-.11- -.02) | .24* | (.05-.42) | .39* | (.05-.74) | .25† | (-.02-.52) |
| Lower education | -.02 | (-.06-.02) | -.12 | (-.28-.04) | .16 | (.14-.46) | .10 | (-.12-.32) |
| Intermediate education | .00 | (-.01-.03) | .01 | (-.11-.14) | .04 | (-.19-.27) | -.07 | (-.25-.11) |
| ICC | .06 | | .02 | | .11 | | .01 | |

† p<0,10, * p<0,05, ** p<0,01.

[a] Baseline measurement of the outcome measure.

### *3.3.2 Qualitative results*

The *mindmapping sessions* did play an important role in increasing the enthusiasm of the employees. The participants valued the possibility of not only giving their opinions, but also that these were taken seriously and that they had a say in the following steps of the program. Although the mindmapping sessions were valued, the participants often had trouble to make things specific, especially when contemplating on possible actions to decrease mental retirement. Therefore, it was important that the facilitators dug deeper and asked more questions. The way participants received the results of questionnaires during the *diagnostic phase* changed throughout the study. Halfway through the study the questionnaires had to be administered in a new digital portal. In this new portal participants received their results directly after finishing their questionnaire. This personal report not only included their personal results, but also tips and feedback about how to improve their scores. This new portal was implemented in two of the teams within the police force. The participants of the other two organizations and the third team of the police filled out the questionnaires in the 'old' digital environment, which did not have a personal report and direct feedback. The content of the questionnaire was the same in all teams (of course except for the tailored questions). Another obstacle in this phase was the timing of the questionnaire. Sometimes the questionnaire had to be sent out during the same time as the employee engagement survey or a survey for a different study. This had possible negative effects on the response-rate. However, the timing of the questionnaire was always in coordination with the project group.
In the interactive sessions where the participants *choose the interventions* that would be implemented and made an action plan for this implementation, the participants again valued the possibility to give their opinion and the influence they had on the implementation-plan. The participants were perfectly able to make up their mind about the suggested interventions, to tailor those interventions for their own team or organization and to make an action plan. However, it was difficult for them to come up with new interventions themselves based on the results of the questionnaire and their own needs. Examples of interventions that were implemented in the teams are making employees themselves responsible for the distribution of work; allowing every employee to spend two hours per week on keeping their knowledge up-to-date; "secret service" (i.e. employees are rewarded and praised for small and big accomplishments without knowing who gave them the reward or praise); and various training programs, including a training in 'appreciative dialog' (which is based on the appreciative inquiry aiming at enforcing the positive instead of battling the negative); a training in providing feedback; a training on the job (by giving employees more opportunities for informal learning during their normal work tasks); and a training in job crafting.

In the *intervention implementation phase*, the teams struggled to effectively implement the interventions that were chosen and to keep the team members involved in the program. Nevertheless, the program still continued and in all teams interventions were implemented. However, in some cases these were different interventions than initially planned, due to evolving circumstances and insights gained. One of the teams installed a project manager whose fulltime job it was to implement the action plan and the interventions. This helped to keep the focus on the program and to carry out the action plan.
Carrying out the effect *evaluation* and sending out the second questionnaire was difficult. The response rate was lower (see Table 1), mostly due to the decreased focus on the program as is described above. In addition, due to the restructuring in one organization the team members changed during the study. Employees transferred to other teams that didn't participate in the program and employees from other teams started working in a team that did participate. Of course in all organizations there were also some changes in team members because employees retired, got a new job and new employees were hired, but these numbers are quite low.

With regard to the *overall context and setting of the organizations*, several factors had an influence. In one organization a restructuring took place during the study, in another organization that operates in a political environment there was a change in responsibilities for a national insurance and in the last organization the study started just after a new director was assigned. All these changes started before the beginning of the study and the organizations deliberately chose to still start with the mental retirement program because especially in such situations it is important to take control over your own development.

## 3.4 Discussion

The present study investigated the effect of a stepwise, bottom-up participatory program to decrease the level of mental retirement of employees in three different organizations. This study showed no difference in mental retirement between baseline and follow-up one year later. However, multilevel analysis also showed that employees who actively participated in the intervention(s) that were implemented during step 4 of the program did show a decrease in mental retirement and its sub-concepts. By incorporating the measurement of intervention exposure, a type-III error (incorrectly concluding that an intervention is ineffective when it is actually its *implementation* that is suboptimal) was prevented.

An important aspect of the mental retirement program is its bottom-up participatory design. In all steps of the program the whole team is involved and together they decide what interventions will be implemented and how to do this (by mak-

ing an action plan). The positive effects of the use of participatory designs have been well established in other studies [31,33-35]. Such designs can lead to feelings of joint ownership, control and responsibility, a greater sense of fairness and may smoothen the change process [33,36,37]. A second important feature of the mental retirement program is the stepwise, tailor-made intervention process. This approach increases the chance that the interventions that are chosen meet the specific needs of the team better, that the action plans that are made are more effective and that the results are better used [30-32]. These two features of the mental retirement program (participatory design and the stepwise, tailor-made intervention process) might be more important in explaining the effects that were found in the present study than the specific interventions that were implemented in each team during step 4 of the program.

Even though the present study shows small but good effects of the mental retirement program, there are some improvements imaginable. First of all, in the current study the setting and context of the organizations changed throughout the study. Although the researchers kept a log book to document these changes, it is difficult to pinpoint if and how these changes affected the results. In addition, the response-rate on baseline and follow-up was reasonable, but the number of employees that filled out (part of) both questionnaires was low in some departments. Furthermore, in the intervention implementation phase, the organization is in the lead and has complete autonomy and the role of the researchers is marginalized. During this study it appeared that this might be too big a change compared with the first three steps of the program. The teams struggled to keep the program 'alive', to preserve the commitment of the team members and to implement changes when there were no researchers to keep them on track. Earlier research has also shown this struggle [48,49]. One of the departments solved this problem by installing a fulltime project manager whose job it was to implement the action plan and the interventions. So, although a participatory design is important to create commitment and ownership, it appears that there has to be some guidance or coaching.

### Strengths and limitations

To our knowledge, the present study is the first that examines the effects of a program for diminishing mental retirement. Such a program may become more important because of the increasing interest in sustainable employability due to the rapid changes in skills demands and the labor market and the fast aging of the workforce. Therefore, there is a necessity for more attention and awareness for concepts like mental retirement. Another strength of this study is that this study shows that more generic principles like a participatory, stepwise and tailor-made approach, appear to be more important than the specific interventions that are implemented within an organization. Future research should focus more on these generic principles and study how and in what circumstances this leads to success.

However, when interpreting the findings of this study some limitations should be kept in mind. First, although an intervention exposure measure was used in this study a control group is missing. Even employees who reported that they had not actively participated in the intervention(s), are exposed to the program. All the members of a department were informed about the mindmapping sessions, the results of the baseline questionnaire and the interactive sessions where plans of actions were made for the intervention(s). In addition, only employees that reported to participate (very) much in an intervention were classified as exposed to an intervention. Employees that reported to participate only a little in an intervention were classified as non-exposure. So, in the present study it wasn't possible to select a control group that wasn't exposed to the mental retirement program. Second, in this applied research study the contextual setting changed continuously, for example by the restructuring in one organization. It is possible that confounding biased and influenced the data [50]. To get more grip on the contextual setting, the researchers kept track of changes to the setting in a logbook. Furthermore, multilevel modelling was used to correct the cluster effect. Third, in the present study only two questionnaires were sent out, one at baseline (after the mindmapping session) and one at follow-up (approximately one year later). It would be interesting to see what the effects of the program are when using more measurements, for instance a baseline measurement before the mindmapping sessions and follow-up measurements both on short term as well as long term. Especially since in the present study the process of implementation of the interventions was a challenge and commitment to the program was possibly lost during this phase. Therefore, future research should be longitudinal in nature, have multiple measuring moments to look into both short term as well as long term effects and have a more extensive process evaluation. Furthermore, new research should focus more on exploring the concept of mental retirement itself and also explore the predictors and the effects of mental retirement. Also, other sources of data should be considered since the present study only makes use of self-report which can be prone to recall bias. Last, new studies should use a more powerful manipulation of the groups to see what the effects are of the mental retirement program in a study with a control group with employees that have no knowledge of the mental retirement program at all, compared to a intervention group that did participate in the program.

## 3.5 Conclusions

The present study aimed to gain insight in the effect of a bottom-up participatory program to decrease the level of mental retirement of Dutch employees. This study showed that the participatory program had positive effects: it tends to decrease the level of mental retirement for employees who actively participated in the intervention(s) that were implemented during step 4 of the program. Im-

portant aspects of the mental retirement program are a bottom-up participatory approach and a stepwise, tailor-made intervention process. However, the phase of implementing the interventions could be further improved since this process proved to be very challenging and commitment to the program was diminished during this phase. Although the present study showed small effects and had some limitations in design, future research could study the effectiveness of this program further to strengthen the concept of mental retirement. Future research should not only study the concept itself but also its predictors and make use of an improved design with for instance a control group, multiple follow-ups and several data sources.

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# 4

# Differences in Predictors of Return to Work Among Long-Term Sick-Listed Employees with Different Self-Reported Reasons for Sick Leave[1]

[1] Huijs, J.J.J.M., Koppes, L.L.J., Taris, T.W., & Blonk, R.W.B. (2012). *J Occup Rehabil, 22*(3), 301-311. Author Huijs designed the study, collected and analysed the data, interpreted the findings, and wrote the manuscript. Authors Koppes, Taris and Blonk co-designed the study, interpreted the findings and edited the manuscript.

## Abstract

**Introduction:** The present study aimed to gain insight in the predictors of full return to work (RTW) among employees on long-term sick leave due to three different self-reported reasons for sick leave: physical, mental or co-morbid physical and mental problems. This knowledge can be used to develop diagnosis-specific interventions that promote earlier RTW.

**Methods:** This prospective cohort study with a two-year follow-up employs a sample of 682 Dutch employees, sick-listed for 19 weeks (SD = 1.68), who filled out two questionnaires: at 19 weeks and 2 years after the start of sick leave. The dependent measure was duration until full RTW, the independent measures were cause of sick leave, health characteristics, individual characteristics and work characteristics.

**Results:** Reporting both physical and mental problems as reasons for sick leave was associated with a longer duration until full RTW. Nonparametric Cox survival analysis showed that partial RTW at baseline and lower age were strong predictors of earlier RTW in all three groups, and that RTW self-efficacy predicted earlier RTW in two groups. Other predictors of full RTW varied among groups.

**Conclusions:** Tailoring for different reasons for sick leave might improve the effects of new interventions because the predictors of full RTW differ among groups. Enhancement of partial RTW and RTW self-efficacy may be relevant components of any intervention, as these were predictors of full RTW in at least two groups.

## 4.1 Introduction

Sickness absence is a point of continuous concern for most organizations. Especially long-term sickness absence receives much attention due to the decrease in quality of life for the individual and the high costs for the organization. The costs for society are also high because of productivity loss, medical consumption and disability benefits [1, 2]. The costs for all these stakeholders could decrease if employees return to work (RTW) earlier.

Unfortunately, at present there is no consistent evidence with respect to the factors that contribute to successful RTW. The existing literature mainly focuses on predictors of sick leave, the onset of disorders or the process of RTW among physically disabled workers, but not on factors that may promote or hinder RTW [3, 4]. Although there may be similarities, it is plausible that predictors of sick leave differ from those of RTW [5]. The present study examined predictors of full RTW for long-term sick-listed employees with various diagnoses. Below we first give an overview of research so far on predictors of RTW.

Previous research has focused on four groups of predictors: health, individual, work and social/legal context characteristics. Health characteristics have most frequently been investigated as predictors of RTW. People with a better health have a higher chance to return to work [4, 6]. Several studies indicate that especially depressive symptoms adversely affect work status and duration until RTW [4, 7, 8]. Furthermore, a higher level of anxiety decreases the chance of RTW [7, 9].

In addition to health characteristics, several individual characteristics have shown to be related to RTW. First, the following demographic concepts are linked to a lower chance of RTW or a longer duration until RTW: older age, gender (although the direction of this association varies across studies), low level of education, and a high personal income [4, 6, 8, 10]. Secondly, some authors argue that self-efficacy is a central concept in relation to RTW. Self-efficacy refers to the belief an individual has in his own capacity to perform a specific behavior successfully [11]. In employees with common mental health disorders, a higher level of RTW self-efficacy before treatment (i.e., the belief a person has in fulfilling work demands or a work role) increases the chance of partial RTW and full RTW [12]. Similar results were found among unemployed schizophrenic patients [13], employees on sick leave with various health complaints [14], and sick-listed workers with physical problems [15]. As a third individual factor, coping may play an important role in the RTW-process. Passive or avoidance coping strategies have a negative influence on overall health, whereas active coping is positively related to well-being [16, 17]. Similar associations are shown between coping and sickness absence [18]. Sickness absence is higher in employees with an avoidant coping style, while an active coping style is related to less sickness

absence. To our knowledge, however, no studies investigated the relation between coping and RTW.

Work characteristics have been studied often in relation to sickness absence and the onset of disorders. Yet, relatively few studies have examined the link between work aspects and RTW. One exception is social support. Several studies have shown that a high level of supervisory support is related to earlier RTW [19, 20]. A similar conclusion was reached by Krause et al. [5], who reported that low supervisory support reduces the RTW rate. Co-worker support seemed to have the same effect in this study, but this effect was not significant. Low co-worker support was significantly related to a longer duration until RTW in another study [21]. This study also revealed a relation between supervisory support and RTW. However, here a low level of supervisory support was related to a higher RTW rate. Other studies reported associations between high job demands or low job control and a lower chance of RTW [5, 7, 10, 21].

Social context characteristics is a fourth group of predictors of RTW. Disability policies and social security systems differ between countries. Often a distinction is made between a compensation policy approach or welfare based system and a reintegration policy approach or integrated system [22]. In the first approach people receive financial support in case no other means of income is available. It has a broad access to disability benefits, combined with fewer reintegration efforts. Countries with a welfare system are for example the UK and Ireland. The reintegration approach on the other hand focuses primarily on reintegration and has a more restricted access to disability benefits. Providing financial support is not the main goal in this system. The Dutch and Finnish system are examples of the integrated system [4, 22]. Several studies show that in addition to health characteristics, job characteristics and type of intervention, disability policies explain RTW-rates [4, 22, 23].

Most studies described above have been conducted in populations with specific complaints; employees off work due to back injury [5], people with chronic pain [8], people with mental health problems [10, 13, 20], or employees with physical complaints [15]. The few studies that did study factors that enhance RTW in more than one disorder, found differences in these factors between the disorders. For instance, employees with a higher education return to work earlier if they suffer from mental health complaints rather than physical complaints [4]. In addition, the associations of self-efficacy and social support with RTW vary across different health conditions [14]. Therefore, the factors related to RTW are likely to vary across different types of disorders. In order to facilitate an earlier RTW, it is important to gain more insight into the patterns of predictors of RTW across various disorders. The present study will address this issue. This knowledge may be used to develop interventions that focus on enhancing RTW among specific groups. Such information may support employees as well as professionals, such as occupational physicians, general practitioners, social workers and psychologists, to facilitate earlier RTW.

## 4.2 Method

### *4.2.1 Design and Procedure*

The research population in this prospective cohort study consisted of a sample of Dutch employees on long-term sick leave. The participants of this study were recruited from the register of the Dutch Social Security Agency. This national register lists employees who are on sick leave for at least 13 weeks. Questionnaires were sent to each employee in the Netherlands that had a first day of sickness absence between May 19 and June 16 in 2007. The questionnaire was sent on the 5th of October 2007 to 10,118 employees. Employees were asked to fill out the questionnaire if they were still on (partial) sick leave. In total 2,597 (26%) employees returned the questionnaire. Seventy-seven percent of these employees (*n* = 2,000) met the inclusion criterion of being (partially) on sick leave. A non-response analysis showed that females and older employees were more likely to return the baseline questionnaire. In the population 50% was female and 46% was older than 45 years, in the sample 54% was female and 60% was older than 45 years. On average, the participants were 19 weeks on sick leave when filling out the first questionnaire. In the first questionnaire, the participants were asked to sign up for the follow-up questionnaire. The 1,592 participants that signed up for the follow-up questionnaire were sent a second questionnaire (24 to 25 months after being sick-listed). In total, 828 people filled out the second questionnaire (a response rate of 52%). Figure 1 summarizes the data collection process in a flowchart. Participants at baseline were on average 46.6 (SD = 9.3) years old, were more often female (58.4%), and had an employment contract of 31.7 hours (Sd = 8.7). Almost 60% had partially returned to work at baseline for an average of 27.4 hours (SD = 28.8).

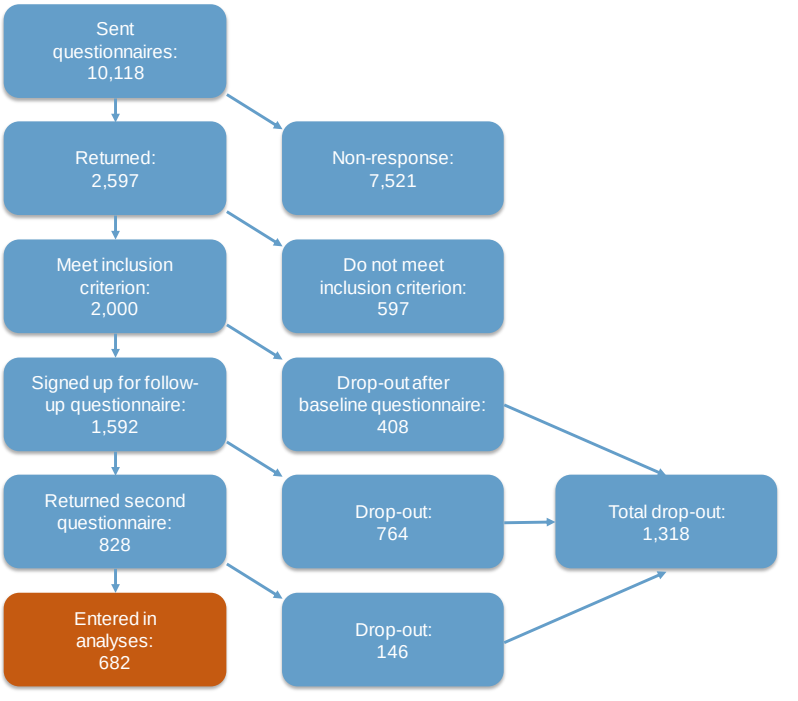


Figure 1 Flowchart of the data collection process

### 4.2.2 Measures

#### Self-reported Cause of Sick Leave

The major cause of sick leave was measured with the question "What is the most important cause of your sick leave?". Participants could choose one of the following three answers: physical problems; mental (or psychosocial) problems; physical and mental (or psychosocial) problems.

#### Return to Work

RTW was measured with the item "Are you working again at the moment?". The answering categories were: "no, I am still sick" (0); "no, but I have been working in the mean time" (1); "yes, partially for … hours per week since …" (2); and "yes, fully since …" (3). RTW was operationalized as the length of time in calendar days from the start of sickness absence until full RTW, as reported by the participants in the questionnaires. Employees were marked as returned to work fully if they were working at least the number of hours specified in their employment contract. Working on a therapeutic basis (i.e., with adjusted tasks or responsibilities) was not considered full RTW.

## Predictors of RTW

The possible predictors of RTW were categorized in three groups: health characteristics, individual characteristics and work characteristics. The *health characteristics* included in this study are depression and anxiety. *Depression* was measured with the shortened self-report 10-item Centre for Epidemiologic Studies Depression scale (shortened CES-D) [24]. An example item was: “I was bothered by things that usually don’t bother me”. Respondents were asked to describe how often they experienced each of these symptoms in the last week, with 0 = “Rarely or none of the time (less than 1 day)”, 1 = “Some or a little of the time (1–2 days)”, 3 = “Occasionally or a moderate amount of the time (3–4 days)”, and 4 = “Most or all of the time (5–7 days)”. Its internal consistency in our study (Cronbach's alpha) was .88. *Anxiety* was measured with the STAI (State-Trait Anxiety Inventory) [25]. The scale consisted of 3 items with a reliability of .76, including “I feel nervous” (0 = “not at all”, 3 = “very”).

The *individual characteristics* included socio-demographic background variables, coping styles, RTW self-efficacy and expectations concerning the work environment. Eight single items measured *socio-demographic characteristics* (gender, age, level of education, ethnicity, marital status, presence of children in the household, type of contract, and working hours according to contract before sick leave). Moreover, *three coping styles* (active-problem-solving; 5 items, avoidance; 5 items, and social-support-seeking; 3 items) were measured using scales from the Utrecht Coping List (UCL) [26]. The reliability of the three scales ranged from .71 to .87. The items of the active-problem-solving, avoidance and social-support- seeking scales were created by completing the suffix “Indicate how often you generally would react in the described way to problems” with “Think of different possibilities to solve a problem” (active-problem-solving), “Avoiding difficult situations as much as possible” (avoidance) and “Seek comfort and sympathy” (social-support- seeking), 0 = “seldom or never” (0), 3 = “very often”. *Return to work self-efficacy* was measured with 11 items [12], including:” If I resumed my work fully tomorrow I expect that: I will be able to perform my tasks at work” (0 = “disagree entirely”, 5 = “agree entirely”, α = .93). Finally, *expectations concerning the work environment* were measured with three self-constructed items with a reliability of .80. The three items were: “If I resumed my work fully tomorrow I expect that …” (1) “… My supervisor will help me to solve potential problems”, (2) “… My colleagues or supervisor will make my work difficult for me” (reversed), and (3) “… I will have a confident at work” (0 = “disagree entirely”, 5 = “agree entirely”).

The *work characteristics* included seven concepts from the Job Content Questionnaire [27]. At baseline employees were asked how they perceived their work before their sick leave. The response categories of all questions ranged from 0 (“completely disagree”) to 3 (“completely agree”). *Skill discretion* was measured with 5 items, such as “My job requires me to be creative” (α = .68). *Decision authority* was measured with 3 items (α = .78), such as “I have a lot of say about

what happens on my job". *Psychological job demands* were measured with 4 items (α = .77), including "I have enough time to get the job done". Four items *tapped coworker* support (α = .81), such as "People I work with are friendly". Four similar items tapped *supervisor support* (α = .88), including "My supervisor is concerned about the welfare of those under him". *Physical exertion* was measured with 3 items, including "My job requires lots of physical effort" (α = .88). Finally, *posture* consisted of 2 items with a reliability of .90. An example of an item was "I am often required to work for long periods with my body in physically awkward positions".

### Statistical Analysis

Employees who filled out all variables were entered in our analysis. In total, 682 employees fulfilled this criterion (see figure 1). These 682 employees differed from the employees that dropped-out during the data collection, as they were more often female, older, higher educated, partially at work at baseline, and had a lower level of anxiety, a higher level active-problem-solving coping and a lower level of physical exertion. Of these 682 employees, 359 reported physical problems, 159 reported mental problems, and 164 reported both physical and mental problems as the main cause of their sick leave. Differences among these three groups at baseline were tested with Pearson Chi-square tests and *t*-tests. *T*-tests were also performed to study possible differences in duration until full RTW between employees with different complaints. The predictors of RTW were analyzed using Nonparametric Cox survival analysis. The time lag used in our study was 2 years. To include participants that had not fully resumed work in our analysis, for these individuals an artificial duration was set at the number of days between start of sick leave and filling out the follow-up questionnaire. Two years after the start of sick leave, 209 people reported in the follow-up questionnaire that they had not returned to work fully. Survival analyses produced hazard ratios (HR) per predictor. These hazard ratios can be interpreted as a relative chance (compared to a reference group) to the occurrence of a particular event (in this case, full RTW). Thus, a HR larger than one signifies a higher chance of full RTW and therefore a shorter duration until full RTW (i.e., earlier RTW). First, the relations among all possible predictors and the outcome were assessed univariately. Twelve variables significantly predicted duration until full RTW in at least one of the groups. These variables were then tested in the multivariate models in all three groups. In addition, all multivariate analyses were adjusted for gender (age and education were already in the analyses because of their significance in the univariate models).

## 4.3 Results

### *4.3.1 Baseline Characteristics*

Participants were assigned to one of three groups: those that ascribed their absence to physical problems (52.6%), to mental problems (23.3%) and to both physical and mental problems (24.0%). On average, employees ascribing their sickness absence to physical problems were older, more often married or cohabiting, had a lower educational level, a higher level of active-problem-solving coping and a higher level of physical exertion than respondents ascribing their sick leave to mental problems (Table 1). In addition, respondents who ascribed self-reported their sick leave to physical problems had a lower level of depression, anxiety and avoidance coping and a higher level of RTW self-efficacy and expectations about the work environment than employees ascribing their absence to mental problems or physical and mental problems. Those ascribing their absence to mental problems were more often female. At baseline no differences among the groups in work status were found. Almost 60% of the employees were (still) partly working at baseline.

Table 1 Baseline characteristics of the participants

| | Main cause of sick leave[a] | | | |
|---|---|---|---|---|
| | Physical problems | Mental problems | Physical and mental problems | Total |
| *N:* | 359 | 159 | 164 | 682 |
| *%:* | 53% | 23% | 24% | 100% |
| **Gender** | | | | |
| Male (%) | 44.0% | 34.6%* | 43.3% | 41.6% |
| Female (%) | 56.0% | 65.4%* | 56.7% | 58.4% |
| **Age** | | | | |
| Mean | 47.4* | 43.8*** | 47.4 | 46.6 |
| SD | 9.29 | 9.30 | 8.63 | 9.25 |
| **Marital status** | | | | |
| No partner (%) | 16.7%* | 27.4%* | 21.1% | 20.3% |
| Married or cohabiting (%) | 83.3%* | 72.6%* | 78.9% | 79.7% |
| **Working hours according to contract** | | | | |
| Mean | 31.6 | 32.3 | 31.4 | 31.7 |
| SD | 9.41 | 7.85 | 8.17 | 8.77 |
| **Children living at home** | | | | |
| No (%) | 50.4% | 49.1% | 48.8% | 49.7% |
| Yes (%) | 49.6% | 50.9% | 51.2% | 50.3% |
| **Education** | | | | |
| Lower education (%) | 45.1%*** | 22.6%*** | 42.1% | 39.1% |
| Intermediate or higher education (%) | 54.9%*** | 77.4%*** | 57.9% | 60.9% |
| **Ethnicity** | | | | |
| Native (%) | 90.8% | 87.4% | 86.6% | 89.0% |
| Immigrant (%) | 9.2% | 12.6% | 13.4% | 11.0% |
| **Contract type** | | | | |
| Permanent position (%) | 96.4% | 92.5% | 94.5% | 95.0% |
| Fixed term contract (%) | 3.6% | 7.5% | 5.5% | 5.0% |
| **Working status** | | | | |
| Full sick listed (%) | 39.3% | 36.5% | 46.3% | 40.3% |
| Partial RTW (%) | 60.7% | 63.5% | 53.7% | 59.7% |
| **Depression** | | | | |
| Mean | 0.74*** | 1.28*** | 1.38*** | 1.02 |
| SD | 0.53 | 0.67 | 0.65 | 0.66 |
| **Anxiety** | | | | |
| Mean | 0.94*** | 1.35*** | 1.45*** | 1.16 |
| SD | 0.61 | 0.65 | 0.74 | 0.69 |

| | Main cause of sick leave[a] | | | |
|---|---|---|---|---|
| | Physical problems | Mental problems | Physical and mental problems | Total |
| **Coping (active-problem-solving)** | | | | |
| Mean | 1.92*** | 1.78* | 1.79 | 1.86 |
| SD | 0,47 | 0,48 | 0,55 | 0,50 |
| **Coping (avoidance)** | | | | |
| Mean | 0.90*** | 1.11* | 1.15*** | 1.01 |
| SD | 0.48 | 0.67 | 0.65 | 0.59 |
| **RTW self-efficacy** | | | | |
| Mean | 3.59*** | 2.78*** | 2.75*** | 3.20 |
| SD | 0.96 | 1.24 | 1.25 | 1.18 |
| **Expectations work environment** | | | | |
| Mean | 3.83*** | 3.19*** | 3.27*** | 3.54 |
| SD | 1.07 | 1.39 | 1.25 | 1.23 |
| **Physical exertion** | | | | |
| Mean | 1.29*** | 0.76*** | 1.13 | 1.13 |
| SD | 0.86 | 0.78 | 0.83 | 0.86 |

[a] *: p<0.05, **: p<0.01, ***: p<0.001: significantly high (low) percentages and/or means.

### *4.3.2 RTW in the Three Groups*

Table 2 shows that at follow-up, more employees who ascribed their sickness absence to mental problems had returned to work fully, as compared to employees with self-reported physical problems or with a combination of physical and mental problems. Of the employees with self-reported mental problems as the cause of sick leave, 77.4% had returned to work fully at follow-up. In addition, the duration until full RTW was longer for employees who ascribed their absence to a combination of physical and mental problems (512.3 days).

Table 2 RTW characteristics of the participants

| | Main cause of sick leave[a] | | | |
|---|---|---|---|---|
| | Physical problems | Mental problems | Physical and mental problems | Total |
| **Working status at 2 years after the start of sick leave** | | | | |
| Fully sick listed (%) | 20.6% | 13.8%* | 24.4% | 19.9% |
| Partial RTW (%) | 11.1% | 8.8% | 11.6% | 10.7% |
| Full RTW (%) | 68.2% | 77.4%* | 64.0% | 69.4% |
| N | 359 | 159 | 164 | 682 |
| **Level of RTW in % of contract hours at 2 years after the start of sick leave** | | | | |
| Mean | 75.7 | 81.6* | 71.2 | 76.0 |
| SD | 40.6 | 36.5 | 42.9 | 40.3 |
| N | 356 | 159 | 164 | 679 |
| **Days until full RTW as measured at 2 years after the start of sick leave** | | | | |
| Mean | 473.8 | 442.2* | 512.3* | 475.7 |
| SD | 245.7 | 228.8 | 234.8 | 240.1 |
| N | 359 | 159 | 164 | 682 |

[a] *: p<0.05, **: p<0.01, ***: p<0.001: significantly high (low) percentages and/or means.

### *4.3.3 Predictors of RTW Within 2 Years After the Start of Sick Leave*

Univariate analyses show that health, individual and work characteristics predict the duration until full RTW, but in the multivariate models, only individual characteristics remain significant predictors of full RTW (Table 3). Working status at baseline and age predicted full RTW in all groups. For employees who worked partially at baseline the duration until full RTW was shorter (HR ranged from 1.60 to 2.52 in the three groups). Older age was related to a slightly longer duration until full RTW (HR = 0.97 or HR = 0.98 in the three groups). In the group with self-reported physical problems as cause of sick leave, education (HR = 1.34) and RTW self-efficacy (HR = 1.38) predicted full RTW. A higher education or a higher level of RTW self-efficacy at baseline was related to a shorter duration until full RTW. In the group ascribing their sickness absence to mental problems, for employees with a fixed term contract the duration until full RTW was longer (HR = 0.27). In the group with self-reported physical and mental problems as cause of sick leave, employees with children living at home (HR=1.57), employees with a higher level of active-problem-solving coping (HR = 1.58) or a higher level of RTW self-efficacy at baseline (HR = 1.24) fully returned to work earlier, whereas the time until full work resumption was longer for employees with a fixed term contract (HR = 0.18).

Table 3 Predictors of duration until full RTW (in days) at 2 years after the start of sick leave

| | Physical problems | | | | Mental problems | | | | Physical and mental problems | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Univariate | | Multivariate | | Univariate | | Multivariate | | Univariate | | Multivariate | |
| | $N_{min}$=380$N_{max}$=392[a] | | N=359 | | $N_{min}$=162$N_{max}$=165 | | N=159 | | $N_{min}$=170$N_{max}$=173 | | N=164 | |
| | HR[b] (95% CI) | *P*[c] | HR (95% CI) | *P* | HR (95% CI) | *P* | HR (95% CI) | *P* | HR (95% CI) | *P* | HR (95% CI) | *P* |
| Working partially at baseline (ref=no) | *1.78 (1.37-2.30)* | *<.01* | *1.60 (1.22-2.10)* | *<.01* | *1.96 (1.34-2.86)* | *<.01* | *1.81 (1.20-2.73)* | *.01* | *2.49 (1.68-3.68)* | *<.01* | *2.52 (1.63-3.90)* | *<.01* |
| Gender (ref=male) | 1.16 (0.91-1.49) | .24 | 1.03 (0.79-1.35) | .84 | 0.79 (0.55-1.13) | .20 | 0.68 (0.45-1.04) | .07 | 1.13 (0.77-1.65) | .53 | 0.85 (0.55-1.31) | .45 |
| Age | *0.97 (0.96-0.99)* | *<.01* | *0.98 (0.97-1.00)* | *.01* | 0.99 (0.97-1.01) | .25 | *0.98 (0.95-1.00)* | *.03* | *0.98 (0.96-1.00)* | *.04* | *0.97 (0.95-1.00)* | *.04* |
| Children living at home (ref=no) | 1.23 (0.97-1.57) | .09 | 1.20 (0.93-1.56) | .16 | 1.02 (0.72-1.45) | .90 | 0.92 (0.63-1.34) | .66 | *1.84 (1.26-2.71)* | *<.01* | *1.57 (1.04-2.38)* | *.03* |
| Education (ref=low education) | *1.35 (1.06-1.73)* | *.02* | *1.34 (1.01-1.77)* | *.04* | *1.73 (1.10-2.70)* | *.02* | 1.58 (0.96-2.61) | .07 | 1.05 (0.72-1.54) | .79 | 0.66 (0.40-1.10) | .11 |
| Type of contract (ref=permanent) | 1.06 (0.57-2.00) | .85 | 1.01 (0.51-2.01) | .98 | *0.33 (0.15-0.75)* | *.01* | *0.27 (0.11-0.63)* | *<.01* | 0.25 (0.06-1.01) | .05 | *0.18 (0.04-0.76)* | *.02* |
| Depression | *0.62 (0.49-0.79)* | *<.01* | 0.82 (0.60-1.12) | .22 | *0.64 (0.49-0.83)* | *<.01* | 0.89 (0.54-1.46) | .65 | *0.71 (0.53-0.96)* | *.03* | 0.91 (0.56-1.51) | .72 |
| Anxiety | *0.62 (0.50-0.77)* | *<.01* | 0.97 (0.74-1.28) | .82 | *0.63 (0.49-0.82)* | *<.01* | 0.90 (0.56-1.46) | .68 | *0.64 (0.49-0.83)* | *<.01* | 0.70 (0.48-1.04) | .08 |
| Coping (active-problem-solving) | *1.35 (1.04-1.75)* | *.02* | 1.09 (0.81-1.47) | .56 | 1.42 (1.00-2.03) | .05 | 1.49 (0.98-2.25) | .06 | 1.28 (0.91-1.81) | .16 | *1.58 (1.04-2.41)* | *.03* |
| Coping (avoidance) | *0.75 (0.59-0.96)* | *.02* | 0.91 (0.70-1.19) | .48 | 0.97 (0.74-1.27) | .82 | 1.03 (0.76-1.41) | .84 | 1.00 (0.76-1.32) | .99 | 1.41 (0.99-2.02) | .06 |
| RTW self-efficacy | *1.48 (1.29-1.71)* | *<.01* | *1.38 (1.15-1.64)* | *<.01* | 1.11 (0.96-1.27) | .15 | 1.00 (0.82-1.21) | .96 | *1.33 (1.14-1.55)* | *<.01* | *1.24 (1.01-1.51)* | *.04* |
| Expectations work environment | *1.29 (1.13-1.46)* | *<.01* | 1.10 (0.95-1.27) | .22 | *1.16 (1.02-1.31)* | *.02* | 1.10 (0.93-1.30) | .27 | 1.16 (1.00-1.35) | .05 | 0.93 (0.77-1.12) | .43 |
| Physical exertion | 0.88 (0.76-1.02) | .09 | 0.94 (0.79-1.10) | .42 | *0.76 (0.59-0.97)* | *.03* | 0.85 (0.65-1.12) | .26 | 1.06 (0.85-1.32) | .61 | 1.12 (0.84-1.49) | .43 |

[a] $N_{min}$: lowest number of respondents in the analyses, $N_{max}$: highest number of respondents in the analyses.

[b] HR (Hazard Ratio) of >1 indicates a shorter duration of sickness absence (or earlier RTW).

[c] Outcomes in italics are significant outcomes (p<.05).

## 4.4 Discussion

The present study examined the predictors of full RTW among employees on long-term sick leave due to self-reported physical, mental, or physical and mental problems. Predictors were measured 19 weeks after start of sickness absence and duration until full RTW was measured at two years after the start of sick leave. Employees with a combination of self-reported physical and mental problems as cause of sick leave fully returned to work later than others. Other research also shows that co-morbidity often is related to longer sickness absence and lower RTW rates [28, 29]. One explanation for the unfavourable outcomes for people with co-morbid complaints is the higher complexity of their problems. In addition, research indicates that co-morbid mental health problems are often not diagnosed and therefore remain untreated. This may lead to more sickness absence and longer duration to return to work [30, 31].

The predictors of duration until full RTW differed among groups, but two factors predicted full RTW in all groups: partial RTW and age. Partial RTW was an important predictor of a shorter duration until full RTW. Apparently, partial RTW in time might promote full RTW. Partial RTW can be viewed as a type of gradual exposure to the work situation. Gradual exposure has proven to be an effective instrument in treatment of anxiety disorders [32-34]. The findings of the present study are in line with research that showed that graded work exposure enhances full RTW [35-37]. Employees who already resumed work partially at baseline may have had less severe health problems, which may have facilitated an earlier full-time employment. Partial RTW may also provide successful work experiences that challenge the dysfunctional beliefs an employee might have about work and RTW. The modification of dysfunctional beliefs is one of the basic mechanisms that explain the effectiveness of (gradual) exposure [38, 39]. The second predictor of full RTW that was significant in all groups was age. Older employees had a smaller chance of full RTW. This result is similar to the findings in other studies [4, 6, 8, 10]. Older employees may recover more slowly from their physical or mental problems and therefore have a longer duration until full RTW. Additionally, older employees might more often not aim at RTW but prefer retirement or pre-pension. However, to our knowledge no study has investigated this. Age is the only socio-demographic characteristics that has a consistent effect across all groups in the multivariate analysis. The effect of gender and education seems to be related to the other included variables because their effect disappears in the multivariate analyses (except for education for employees with physical complaints as self-reported cause of sick leave). This implies that age needs to be addressed in interventions for all employees, whereas gender or, to a lesser extent, education do not need to be addressed separately.

The other predictors of full RTW, besides partial RTW and age, varied across groups. Within the group ascribing their sickness absence to physical complaints, the other predictors were the level of education and the level of RTW self-efficacy at baseline. Employees with a low education or a lower level of RTW self-efficacy needed more time to return to work fully. In the group with mental complaints as self-reported cause of sick leave, employees with a permanent contract returned to work fully sooner than those with a fixed term contract. In the group with both physical and mental problems as self-reported cause of sick leave, the duration until full RTW was longer for employees with children living at home, a fixed-term contract, a lower level of active-problem-solving coping or a lower level of RTW self-efficacy. These findings are in line with our expectations. Interestingly, there was no association of RTW self-efficacy in the group with mental complaints as self-reported cause of sick leave, which contradicts findings of earlier research [12]. The effect of self-efficacy in this group may be overruled by other factors, such as stigmatization or social support. For example, a possible explanation is that the stigmatization of mental health problems in the workplace is high. As a result employees might avoid their workplace and receive less support from their colleagues and supervisor, making is less likely to return to work. All of the predictors found in this study were individual characteristics. Contrary to our expectations, no relations were found between health characteristics and work characteristics with duration until full RTW. The level of depression and anxiety, the two health characteristics that were entered in the multivariate analyses, differed significantly across the three groups at baseline. The classification in these three groups may remove much variance en therefore may explain why we did not find any relations between health characteristics and RTW. In addition, other factors (such as work status, coping, RTW self-efficacy) may have partially controlled for the severity of self-reported depression and anxiety and therefore have diminished the effect of depression and anxiety in the multivariate analysis. The correlation between work status at baseline and depression and anxiety was rather small, and therefore it is not likely that work status at baseline controls - to a relevant degree - for severity of self-reported health. However, the correlations between coping, RTW self-efficacy and expectations concerning the work environment on the one hand and depression and anxiety on the other hand were higher. These variables might diminish the effect of depression and anxiety on RTW in the multivariate analysis. These results indicate that employees with lower levels of coping, lower RTW self-efficacy and lower expectations concerning the work environment might hamper RTW in depressive and/or anxious employees, rather than the depression or anxiety itself. Although only few studies investigated the link between work aspects and RTW, we hypothesised that work characteristics could play an important role within the RTW process. However, in our study only one work characteristic, physical exertion, was univariately a predictor of duration until full RTW. In the multivariate analysis the effect of physical exertion vanished. The effect of work characteris-

tics might be determined by the definition and measurement of RTW. Research shows that studies use various definitions of RTW outcomes and differences are found in prognostic factors and these several RTW outcomes [3, 40]. Work characteristics may have a bigger influence on whether or not employees return to work at all instead of the duration until full RTW. Besides health and work related characteristics, other factors such as the social environment, health care and legal context may influence RTW. More research is needed to draw explicit conclusions.

Some of the predictors are stable and hard to address, such as age and type of contract. However, this information can be used to develop prevention policies for specific groups of workers. For example, older employees and employees with a fixed term contract need more time to return to work after sick leave. Organizations might focus on these specific groups in their prevention policies. For instance, organizations might apply job crafting or task rotation especially for older employees and employees with fixed term contracts. In addition, policymakers could pay more attention to the protection of these vulnerable groups and to the support that is provided in the RTW process.

Other predictors can more easily be subjected to interventions and specific measures. An important factor in ensuring that employees at least keep working partially is prevention. If it could be prevented that employees become fully sick-listed, the duration to full RTW might be shorter. Furthermore, our findings indicate that when employees do become fully sick-listed, it might be effective to return to work partially as soon as possible. The challenge here is that employees should only start with partial RTW if they are able to cope with the obstacles they might encounter. Otherwise, they might have to report sick again. The goal of partial RTW, therefore, should be to gain self-confidence and to have success experiences. The level of RTW self-efficacy could be enhanced this way. This may shorten the duration until full RTW further because self-efficacy also was an important predictor within the RTW process in the physical and the co-morbidity group.

The higher the level of RTW self-efficacy at baseline, the earlier employees returned to work fully, which is in line with previous research [12, 14]. Employees with a lower level of RTW self-efficacy are likely to be less confident that they will succeed in the work environment, leading them to avoid this setting. Consequently, their return to work process will be delayed. Conversely, employees with a high level of RTW self-efficacy will have more confidence in their ability to face the challenges in the workplace. When developing new interventions, a focus on improving the level of self-efficacy may be helpful to enhance RTW. According to Bandura [11], the most powerful way to improve self-efficacy is to enhance personal mastery. This can be done through positive reinforcement by success experiences regarding the target behaviour. Other factors that interventions could aim at are enhancing the use of an active-problem-solving coping strategy or improving the educational level of employees.

### Strengths and Limitations

The present study is one of the few that examined the predictors of RTW in several complaints. In addition, all the employees of this study were on long-term sickness absence, with an average sick leave duration when returning the first questionnaire of 19 weeks. Such populations have to date rarely been studied. Next to these strengths, some limitations of the present study must be noted. First, the initial response rate was low. Only 26% of those who received the first questionnaire returned the completed form. However, a low initial response rate is not uncommon in organizational research, because of difficulties reaching the target population (due to for instance wrong addresses or addressing people that afterwards do not meet the inclusion criteria) and the reluctance of the people to respond [41]. However, the response rate of the follow-up of our study is high (52%) considering the long follow-up period (20 months). Furthermore, the overall response of over 800 respondents that returned both questionnaires is high in comparison with other similar studies [8, 13, 15, 20].

Second, it should be noted that the categorizing of the subgroup is based on the self-reported cause of sick leave. Unfortunately, no information about a medical diagnosis was accessible. The self-report of the participants might differ from the opinion of a medical expert. This implies that the differences among the groups may have been contaminated, in that employees with similar causes for their sick leave may have assigned themselves to different groups. This will have led to a conservative estimation of the differences among the study groups.

Finally, the variation in disorders within the three groups was very broad. For example, within the group ascribing their sickness absence to physical problems were employees with cardiovascular problems and musculoskeletal problems. The predictors of RTW might not only differ between the three groups in this study, but also within a group. This uncontrolled with-in group heterogeneity may have affected the findings, resulting in a downward bias of the associations of interest in this study.

## 4.5 Conclusion

The aim of the present study was to gain insight in the predictors of duration until full RTW of Dutch employees on long-term sick leave and in the differences in predictors of those with physical, mental or a combination of physical and mental problems as self-reported cause of sick leave. Analyses showed that for employees reporting both physical and mental problems as the cause of sick leave the duration until full RTW was longer. Partial RTW at baseline and age were strong predictors of full RTW in all three groups. In addition, in the group with physical problems and the group with both physical and mental problems as self-reported cause of sick leave, RTW self-efficacy was strongly associated with full RTW. This study suggests that when developing interventions for employees on sick

leave in general, it might be helpful to aim these interventions at partial RTW and improving RTW self-efficacy. The other significant predictors in this study differed among the three groups. Therefore, it is recommended to develop new interventions aimed at a specific group. These interventions may address the specific predictors of RTW in that group. The more stable predictors, like age and type of contract, may serve as a focus in prevention policies. Future research could study the effectiveness of such interventions and prevention policies. These interventions can be a fruitful approach for employees themselves, and for organizations in reducing the length of sick leave.

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# 5

# Work Characteristics and Return to Work in Long-Term Sick-Listed Employees with Depressive Symptoms[1]

[1] Huijs, J.J.J.M., Koppes, L.L.J., Taris, T.W., & Blonk, R.W.B. (2017). *J Occup Rehabil, 27(4)*, 612-622. Author Huijs designed the study, collected and analysed the data, interpreted the findings, and wrote the manuscript. Authors Koppes, Taris and Blonk co-designed the study, interpreted the findings and edited the manuscript.

## Abstract

**Purpose:** The present study investigated the relations between work characteristics, depressive symptoms and duration until full return to work (RTW) among long-term sick-listed employees. This knowledge may add to the development of effective interventions and prevention, especially since work characteristics can be subjected to interventions more easily than many disorder-related or personal factors.

**Methods:** This prospective cohort study with a two-year follow-up employs a sample of 883 Dutch employees who had been sick-listed for at least 13 weeks at baseline, who filled out three questionnaires: at 19 weeks, 1 year and 2 years after the start of sick leave. The dependent measure was duration until full RTW.

**Results:** Not working (partially) at baseline, low decision authority, high psychological demands, low supervisor support and low RTW self-efficacy were related to more depressive symptoms. The duration until full RTW was longer for employees with depressive symptoms. Low physical exertion, high RTW self-efficacy, working partially at baseline, being married or cohabiting, and young age were related to less time until full RTW. Other work characteristics appeared no independent predictors of RTW.

**Conclusions:** Conclusions: Although the role of job demands and job resources in the RTW process is limited for long-term sick-listed employees with depressive symptoms, a few work characteristics are prognostic factors of full RTW. Focus on these elements in the selection or development of interventions may be helpful in preventing sickness absence, and in supporting long-term sick-listed employees towards full RTW.

## 5.1 Introduction

Mental health problems have a high prevalence in the working population. Every year, one out of four adults in Europe suffers from psychological health issues [1]. Not only is the incidence of psychological disorders high; they often lead to long-term sickness absence and disability as well [2-4]. People who suffer from mental health problems are 30 to 50% less likely to be employed than those with other health problems or disabilities [4]. Several studies indicate that especially depressive symptoms adversely affect work status and duration until return to work (RTW) [5-7].
Depression is a common disorder, affecting over 350 million people worldwide and the leading cause for disability worldwide [8]. The lifetime prevalence of depression in general populations ranges from 10% to 15% [9]. In the working population, the 12-month prevalence rates of mood disorders varies between 4.2% and 6.4% [10, 11]. Depressive symptoms not only often coexist with physical disorders, particularly severe or chronic disorders such as cancer, musculoskeletal and cardiovascular diseases, but physical health problems can also cause depressive symptoms [12]. Depressive symptoms, especially when they culminate into a depressive disorder, are linked to several consequences, including lower labour market participation rates, stigmatization, lower socio-economic status, loss of a valuable source of social support, reduced quality of life and higher mortality rates [1, 9, 13]. Furthermore, employees might lose part of their income and tend to develop even more (severe) psychological symptoms [14]. Along with these individual consequences, the costs for society are also high because of productivity loss, medical consumption and disability benefits [1, 9]. In the Netherlands, depression is the largest contributor to the total number of sickness absence days with a mean duration of 200 days. The annual costs for society have been estimated at 1.8 billion Euros [15]. In Europe, the work-related costs due to psychological disorders are 2.5 times as high as those due to cardiovascular disorders [16].

The costs for individuals and society may decrease if employees on sick leave with depressive symptoms would return to work earlier. Unfortunately, at present there is no consistent evidence with respect to the factors that contribute to successful RTW for employees with depressive symptoms. A review on the factors that are related to work participation and work functioning among employees with depression showed that the literature mainly focuses on the onset of depression; research on factors that may promote or hinder RTW is relatively rare [17]. Even though there may be similarities, it is plausible that predictors of sick leave differ from the predictors of RTW [18]. Although Lagerveld et al. [17] identified 25 studies that investigated predictors of RTW for employees with depression, almost

all of these focused on characteristics of the disorder. The duration of the current episode [19], severity of symptoms [e.g. 2, 20, 21], and co-morbidity are examples of these characteristics or disorder-related factors that lengthen the duration until RTW or are associated with work disability [e.g. 20, 22].

The role of work-related aspects for RTW for employees with depressive symptoms on sick leave, however, is hardly studied. A review [17] revealed only 6 studies that examined workplace factors [2, 19, 21- 24]. There is some evidence that a previous low level of functioning at work is associated with increased work disability [19]. Also, contact between supervisor and other professionals besides the occupational physician is associated with a shorter duration until full RTW, but frequent contact with the supervisor during sick leave is related to a longer duration until full RTW [24]. The evidence for most of the examined workplace factors (like type of company, hours employed, type of occupation, position), however, is inconclusive or insufficient because of the study design (cross-sectional studies) or opposing findings. In addition, a Cochrane review on depressive disorders showed that there are only five studies on workplace interventions for employees with depressive disorders [25]. These five studies provide mixed results on sickness absence reduction.
Based on these results, the role of work characteristics in the RTW process of employees with depressive symptoms remains unclear. However, research in other populations indicates a relation between work characteristics and RTW or disability. High work demands were related to a lower chance of full RTW for employees on sick leave due to *general psychological complaints* [26]. In a population of employees on sick leave due to *low back pain*, high physical and psychological job demands and low supervisory support were related to 20% lower RTW rates, while high job control was related to 30% higher RTW rates [18]. Similar results were reported in 3 other studies: for employees in the public sector, low job control and high job insecurity were related to a 20-30% smaller chance of early rehabilitation [27], and high job strain (i.e. low job control and high job demands) was related to a 2.6 times higher odds for disability pension [28]. Furthermore, low job control and high work demands increased the risk of disability pension for construction workers [29]. Another study showed that employees on sick leave (for a maximum duration of 12 weeks at baseline) who received low coworker support had a longer duration until full RTW, whereas the duration until full RTW was shorter for those who experienced little supervisor support [30]. These studies suggest that work characteristics play an important role in the RTW process. Moreover, of the factors involved in the RTW process, employers can alter and subject work characteristics like job control, job demands and social support more easily to interventions and treatment than disorder-related or personal factors. Therefore, there is a need to evaluate work characteristics in relation to RTW in employees with depressive symptoms on sick

leave. If the prognostic factors of RTW can be identified, a more adequate decision can be made in the selection or development of interventions.

Work related factors may affect mental health and functioning at work. A widely used theoretical model that describes the relations among these factors is the Job-Demand-Resources Model (JDR-Model) [31]. This model describes two connected processes, an erosion process and a motivational process. The erosion process describes how job demands (such as work pressure, psychological job demands, physical job demands) lead to a decrease in (mental) health through exhaustion. Job demands refer to “those physical, social or organizational aspects of the job that require sustained physical or mental effort and are therefore associated with certain physiological and psychological costs” [31]. In the motivational process, job resources (such as decision authority, social support, skill discretion) lead to an increase in (mental) health through engagement [32]. Job resources are defined as “those physical, psychological, social or organizational aspects of the job that may do any of the following: (a) be functional in achieving work goals; (b) reduce job demands at the associated physiological and psychological costs; (c) stimulate personal growth and development” [31]. Later, personal resources were added to the JDR-Model [32]. Personal resources refer to “an individuals’ sense of their ability to control and impact upon their environment successfully” [33]. Personal resources are aspects of the self that are generally linked to resiliency and refer to individuals’ sense of their ability to control and impact upon their environment successfully.
These personal resources (such as self-efficacy, self-esteem and optimism) have the same role in the motivational process as job resources. Previous research has shown that e.g. self-efficacy, self-esteem, optimism, hope and resilience are associated with engagement [32]. Specifically, as a personal resource the current study focuses on participants’ self-efficacy with regard to return to work [34].
The JDR-model describes how the balance between the two processes determines the health status of employees. Therefore, the model describes on the one hand the onset of complaints and disorders, and on the other hand the recovery from health issues [32]. The present study adds two concepts to the JDR-model. First, instead of common mental disorders, health issues are operationalized as depressive symptoms. Work factors and personal factors influence the recovery from common mental disorders like burnout, but the influence of work factors and personal factors on the recovery of more severe disorders such as depression is unknown [35]. Second, RTW is also entered in the model as an outcome. In the RTW process, job resources and personal resources will enhance RTW and job demands will hinder RTW. This prospective study among employees on long-term sick leave thus investigates the associations between job characteristics (job demands, job resources and personal resources), de-

pressive symptoms and RTW. The specific cause of sick leave is not taken into account in this study. The following hypotheses are tested:

- **Hypothesis 1a:** Depressive symptoms are associated with lower job resources (skill discretion, decision authority, coworker support and supervisor support).
- **Hypothesis 1b:** Depressive symptoms are associated with lower personal resources (RTW self-efficacy).
- **Hypothesis 1c:** Depressive symptoms are associated with higher job demands (psychological job demands, physical exertion and posture).
- **Hypothesis 2:** The duration until full RTW is longer for employees with depressive symptoms than for employees without depressive symptoms.
- The hypotheses listed below are tested in the subgroup of employees with depressive symptoms.
- **Hypothesis 3a:** For employees with depressive symptoms, high job resources (skill discretion, decision authority, coworker support and supervisor support) shorten the duration until full RTW.
- **Hypothesis 3b:** For employees with depressive symptoms, high personal resources (RTW self-efficacy) shorten the duration until full RTW.
- **Hypothesis 3c:** For employees with depressive symptoms, high job demands (psychological job demands, physical exertion and posture) lengthen the duration until full RTW.

## 5.2 Method

### *5.2.1 Design and Procedure*

The research population in this prospective cohort study consisted of a sample of Dutch employees on long-term sick leave. The participants of this study were recruited from the register of the Dutch Social Security Agency, that lists employees who are on sick leave for at least 13 weeks. Questionnaires were sent to each employee in the register that had a first day of sickness absence between May 19 and June 16 in 2007. The questionnaire was sent on the 5th of October 2007 to 10,118 employees, who were asked to fill out the questionnaire if they were still on (partial) sick leave. In total 2,597 (26%) employees returned the questionnaire. Seventy-seven percent of these employees (n = 2,000) met the inclusion criterion of being (partially) on sick leave. Non-response analysis showed that females and older employees returned the baseline questionnaire more often than others. On average, the participants had been on sick leave for 19 weeks when filling out the first questionnaire. In this first questionnaire, the participants were asked to sign up for the two follow-up questionnaires. The 1,592 participants that signed up for the follow-up questionnaires were sent a second questionnaire (12-13 months after being sick-listed). Of these partici-

pants, 1,090 people filled out this second questionnaire (response rate of 68%) and these respondents were sent a third questionnaire, 24 to 25 months after being sick listed. This final questionnaire was completed by 828 participants (response rate of 76%).

### 5.2.2 Measures

The baseline questionnaire included information on socio-demographic characteristics, depressive symptoms, work characteristics, RTW self-efficacy and RTW. RTW was also measured one year and two years after the start of sick leave. Eight single items measured *socio-demographic characteristics* (gender, age, level of education, ethnicity, marital status, presence of children in the household, type of contract, number of working hours according to contract before sick leave). *Depressive symptoms* were measured with the shortened self-report 10-item Centre for Epidemiologic Studies Depression (CES-D) scale [36]. An example item was: “I was bothered by things that usually don’t bother me”. Respondents were asked to describe how often they experienced each of these symptoms in the last week, with 0 = “Rarely or none of the time (less than 1 day)”, 1 = “Some or a little of the time (1–2 days)”, 3 = “Occasionally or a moderate amount of the time (3–4 days)”, and 4 = “Most or all of the time (5–7 days)”. The internal consistency in our study (Cronbach's alpha) was .88. A sum score of 10 or greater was considered to signify depressive symptoms [36]. Although this study does not include information about a diagnosis or disorder, the original CES-D scale (cutoff score of 16) is validated with DSM-III criteria for clinical depression [36].

The *work characteristics* included seven concepts from the Job Content Questionnaire [37]. At baseline, employees were asked how they perceived their work before their sick leave. The response categories of all questions ranged from 0 (“completely disagree”) to 3 (“completely agree”). This study included three job demands. *Psychological job demands* were measured with 4 items (α = .78), including “My job requires working very fast”. Physical job demands were measured with two concepts: physical exertion and posture. *Physical exertion* was measured with 3 items, including “My job requires lots of physical effort” (α = .88). *Posture* consisted of 2 items with a reliability of .90. An example of an item was “I am often required to work for long periods with my body in physically awkward positions”.

Further, four job resources and one personal resource were measured. *Skill discretion* was tapped with 5 items, such as “My job requires me to be creative” (α = .70). *Decision authority* was measured with 3 items (α = .76), such as “I have a lot of say about what happens on my job”. Four items tapped *coworker support* (α = .82), such as “People I work with are friendly”. Four similar items tapped *supervisor support* (α = .88), including “My supervisor is concerned about the welfare of those under him”. As a personal resource, *RTW self-efficacy* was

measured with 11 items [33], including: “If I resumed my work fully tomorrow I expect that I will be able to perform my tasks at work” (0 = “disagree entirely”, 5 = “agree entirely”, α = .92).

Finally, *RTW* was measured with the item “Are you working again at the moment?”. The answering categories were: “no, I am still sick” (0); “no, but I have been working in the mean time” (1); “yes, partially for … hours per week since …” (2); and “yes, fully since …” (3). RTW was operationalized as the length of time in calendar days from the start of sickness absence until full RTW, as reported by the participants in the questionnaires. Employees were considered to have returned to work fully if they indicated that they were working for at least the number of hours specified in their employment contract. Working on a therapeutic basis (i.e., with adjusted tasks or responsibilities) was not considered full RTW.

### 5.2.3 Statistical Analysis

First, employees who filled out all variables were entered in our analysis. Second, all employees who reported they did not return to work because of other reasons than sick leave (e.g. because of retirement) at the second or third questionnaire, were removed from our analysis. In total, 883 employees met these criteria at the first follow-up (one year after the start of sick leave) and 635 employees at the second follow-up (two years after the start of sick leave). Differences at baseline between employees with and without depressive symptoms were tested with Pearson $\chi^2$ tests and *t*-tests. *T*-tests were also performed to study possible differences between these two groups in the duration until full RTW. To investigate which work characteristics were related to depressive symptoms at baseline, linear regression analyses were conducted. First, the relations among all work characteristics and RTW self-efficacy with depressive symptoms were assessed univariately at baseline. All variables that significantly associated with depressive symptoms were then tested in a multivariate linear regression analysis. In addition, this multivariate analysis was adjusted for the differences between those with and without depressive symptoms at baseline (gender, age, marital status) and for work status at baseline. Nonparametric Cox survival analysis was used to test the second and third hypotheses. The time lags used in our study were 1 year and 2 years. To include participants that had not fully resumed work in our analysis, these individuals were given an artificial duration (censored observations) which was set at the number of days between start of sick leave and filling out the follow-up questionnaire. Survival analyses resulted in hazard ratios (HR) indicating a relative chance of full RTW. Thus, a HR larger than one signifies a higher chance of full RTW and therefore a shorter duration until full RTW.

To test hypothesis 3, the relations of all work characteristics and RTW self-efficacy at baseline with RTW were assessed univariately for both time lags. Again,

all variables that were significantly associated with duration until full RTW were then tested in the multivariate models at both time lags. Multivariate analyses were adjusted for gender, age, marital status and work status at baseline.

## 5.3 Results

### *5.3.1 Baseline Characteristics*

Participants at baseline were on average 46.4 years old, were more often female (56.3%), and had an average employment contract of 31.7 hours per week (Table 1). Depressive symptoms (CES-D 10, cutoff score of 10 or greater) were reported at baseline by 438 (50%) of the 883 participants. On average, those with depressive symptoms were younger, more often female and more often without a partner. There are no differences between the two groups in duration of sick leave or work status at baseline. Almost 60% of the employees were (still) working partly at baseline, and for an average of 15.4 hours per week. Employees with depressive symptoms worked the same number of hours at baseline as employees without depressive symptoms. One year after the start of sick leave, 320 people had not fully returned to work and 171 people were still on sick leave after two years (table 2). Of the 540 respondents who were (partially) at work two years after the start of sick leave, almost 86% returned to their work at the same employer, 12.5% was employed by a different employer two years after the start of sick leave. At both follow-ups, employees with depressive symptoms were less likely to have returned to work fully, as compared to employees without depressive symptoms at baseline. In addition, the duration until full RTW was longer for employees with depressive symptoms. One year after the start of sickness absence the difference was approximately 30 calendar days in favor of those without depressive symptoms at baseline, at the second follow-up the difference was over 50 days.

Table 1 Baseline characteristics of the participants

| | Depressive symptoms | | |
|---|---|---|---|
| | No | Yes | Total |
| N: | 445 | 438 | 883 |
| %: | 50% | 50% | 100% |
| **Gender** | | | |
| Male | 48,3%▲▲ | 39,0%▼▼ | 43,7% |
| Female | 51,7%▼▼ | 61,0%▲▲ | 56,3% |
| **Age** | | | |
| Mean | 47,2▲▲ | 45,5▼▼ | 46,4 |
| Standard deviation | 8,9 | 9,4 | 9,2 |

| | Depressive symptoms | | |
|---|---|---|---|
| | No | Yes | Total |
| **Marital status** | | | |
| No partner | 16,9%▼▼▼ | 26,3%▲▲▲ | 21,5% |
| Married or cohabiting | 83,1%▲▲▲ | 73,7%▼▼▼ | 78,5% |
| **Working hours according to contract** | | | |
| Mean | 31,9 | 31,4 | 31,7 |
| Standard deviation | 9,5 | 8,5 | 9,0 |
| **Children living at home** | | | |
| No | 45,8% | 50,9% | 48,4% |
| Yes | 54,2% | 49,1% | 51,6% |
| **Education** | | | |
| Lower education | 45,0% | 39,9% | 42,5% |
| Intermediate or higher education | 55,0% | 60,1% | 57,5% |
| **Ethnicity** | | | |
| Native | 89,9% | 89,5% | 89,7% |
| Immigrant | 10,1% | 10,5% | 10,3% |
| **Contract type** | | | |
| Permanent position | 95,1% | 94,7% | 94,9% |
| Fixed term contract | 4,9% | 5,3% | 5,1% |
| **Working hours** | | | |
| ≤32 hours (part-time) | 43,1% | 47,2% | 45,1% |
| >32 hours (full-time) | 56,9% | 52,8% | 54,9% |
| **Organization size** | | | |
| 0-49 employees | 24,5% | 26,5% | 25,5% |
| 50-499 employees | 34,9% | 32,7% | 33,8% |
| 500 or more employees | 40,6% | 40,8% | 40,7% |
| **Depressive symptoms** | | | |
| Mean | 4,86▼▼▼ | 15,9▲▲▲ | 10,4 |
| Standard deviation | 2,63 | 4,67 | 6,71 |
| **Duration of sick leave** | | | |
| Mean | 18,7 | 18,8 | 18,8 |
| Standard deviation | 1,53 | 1,65 | 1,59 |
| **Working status at baseline** | | | |
| Fully sick listed | 38,7% | 44,7% | 41,7% |
| Partial RTW | 61,3% | 55,3% | 58,3% |
| **Hours working at baseline** | | | |
| Mean | 15,7 (N=258) | 15,1 (N=231) | 15,4 (N=489) |
| Standard deviation | 8,6 | 8,1 | 8,4 |

▲▲: p<0,01, ▲▲▲: p<0,001 (and ▼): significantly high (low) percentages and/or means.

Table 2 RTW characteristics of the participants

| | Depressive symptoms | | |
|---|---|---|---|
| | No | Yes | Total |
| **Days until full RTW as measured at 1 year after the start of sick leave** | | | |
| Mean | 279,1▼▼▼ | 310,7▲▲▲ | 294,7 |
| SD | 105,4 | 93,0 | 100,6 |
| N | 445 | 438 | 883 |
| **Working status at 1 year after the start of sick leave** | | | |
| Fully sick listed | 14,8%▼▼ | 23,1%▲▲ | 18,9% |
| Partial RTW | 16,9% | 17,8% | 17,3% |
| Full RTW | 68,3%▲▲ | 59,1%▼▼ | 63,8% |
| N | 445 | 438 | 883 |
| **Days until full RTW as measured at 2 years after the start of sick leave** | | | |
| Mean | 430,5▼▼ | 483,9▲▲ | 456,5 |
| SD | 235,3 | 238,9 | 238,4 |
| N | 326 | 309 | 635 |
| **Working status at 2 years after the start of sick leave** | | | |
| Fully sick listed | 10,1%▼▼▼ | 20,1%▲▲▲ | 15,0% |
| Partial RTW | 12,3% | 11,7% | 12,0% |
| Full RTW | 77,6%▲▲ | 68,3%▼▼ | 73,1% |
| N | 326 | 309 | 635 |

▲▲: p<0,01, ▲▲▲: p<0,001 (and ▼): significantly high (low) percentages and/or means.

### *5.3.2 Associations of work characteristics and RTW self-efficacy with depressive symptoms at baseline*

Univariate analyses showed that all work characteristics (except physical exertion) and RTW self-efficacy were associated with depressive symptoms (Table 3). In the multivariate model, several characteristics remained significantly associated with depressive symptoms. Employees who were married or cohabiting were less likely to have depressive symptoms. Further, employees who worked partially at baseline, who had a higher level of decision authority, a lower level of psychological job demands or who had a higher level of RTW self-efficacy, had fewer depressive symptoms at baseline. Furthermore, female employees and employees who experienced less social support from their supervisor were slightly more likely to have depressive symptoms. Hence, the results are in line with hypothesis 1a for the job resources decision authority and supervisor support. Furthermore, the results are in line with hypothesis 1b: high personal resources are associated with a lower chance for depressive symptoms. Hypothesis 1c was in line with the results for psychological job demands, but not for the job demands physical exertion and posture.

Table 3 Correlates of depressive symptoms at baseline

| | Depressive symptoms | |
|---|---|---|
| | Univariate β | Multivariate β |
| Gender (ref=male) | .09*** | .05* |
| Age | -.09*** | -.03 |
| Marital status (ref=no partner) | -.16*** | -.11*** |
| Working partially at baseline (ref=no) | -.14*** | -.06** |
| Skill discretion | -.09*** | .01 |
| Decision authority | -.20*** | -.08** |
| Psychological job demands | .23*** | .10*** |
| Physical exertion | -.03 | - |
| Posture | .07** | .01 |
| Coworker support | -.15*** | -.04 |
| Supervisor support | -.24*** | -.06* |
| RTW self-efficacy | -.50*** | -.42*** |
| N | 883 | 883 |
| Adjusted R-square | | .29 |

*p<.10, **p<.05, ***p<.01.

### *5.3.3 Associations of depressive symptoms with RTW within 1 year and 2 years after the start of sick leave*

Employees with depressive symptoms had a longer duration until full RTW (HR = 0.97 at both follow-ups) (Table 4). Furthermore, working status at baseline predicted full RTW. For employees who worked partially at baseline, the duration until full RTW was shorter (HR = 2.53 at one year and HR = 1.85 at two years after the start of sick leave). Two years after the start of sick leave, higher age was related to a longer duration until full RTW (HR = 0.98). Therefore, the results are in line with hypothesis 2.

Table 4 Multivariate associations of depressive symptoms with the duration until full RTW at 1 year and 2 years after the start of sick leave

| | 1 year after start of sick leave (N=883) | | 2 years after start of sick leave (N=635) | |
|---|---|---|---|---|
| | HR (95% CI) | *P* | HR (95% CI) | *P* |
| Gender (ref=male) | 0.93 (0.78-1.11) | .43 | 1.08 (0.88-1.31) | .47 |
| Age | 0.99 (0.98-1.00) | .16 | 0.98 (0.97-0.99) | <.01 |
| Marital status (ref=no partner) | 0.95 (0.77-1.18) | .66 | 1.08 (0.85-1.38) | .52 |
| Working partially at baseline (ref=no) | 2.53 (2.11-3.04) | <.01 | 1.85 (1.52-2.24) | <.01 |
| Depressive symptoms | 0.97 (0.96-0.98) | <.01 | 0.97 (0.96-0.99) | <.01 |

HR (Hazard Ratio) of >1 indicates earlier RTW.

### *5.3.4 Associations of work characteristics and RTW self-efficacy with RTW for people with depressive symptoms within 1 year and 2 years after the start of sick leave*

Univariate analyses showed that psychological job demands, physical exertion, posture, skill discretion and RTW self-efficacy significantly predicted duration until full RTW within 1 year or 2 years after the start of sick leave for people with depressive symptoms. However, in the multivariate models only RTW self-efficacy and (to a smaller extent) physical exertion[2] remained significant predictors of full RTW (Table 5). Hence, the results are only in line with hypothesis 3b. A higher level of RTW self-efficacy at baseline, was related to a shorter duration until full RTW at both follow-ups (HR = 1.19 and HR = 1.20). One year after the start of sick leave, a higher level of physical exertion was related to a slightly longer duration until full RTW (HR = 0.84). In addition, working status at baseline, marital status and age predicted full RTW. For employees who worked partially at baseline, the duration until full RTW was shorter (HR = 2.80 at first follow-up and HR = 1.80 at second follow-up). Having a partner at baseline (HR = 1.56) was related to a shorter duration and higher age at baseline (HR = 0.97) to a longer duration until full RTW two years after the start of sick leave.

[2] The HR of physical exertion is almost constant in the univariate and multivariate models. But because of the increase of variance in the multivariate model the significance drops to 0.09 (and 0.19).

Table 5 The relation of work characteristics with duration until full RTW for people with depressive symptoms at 1 year and 2 years after the start of sick leave

| | **1 year after start of sick leave** | | | | **2 years after start of sick leave** | | | |
|---|---|---|---|---|---|---|---|---|
| | Univariate | | Multivariate | | Univariate | | Multivariate | |
| | $N_{min}$=456 $N_{max}$=464 | | N=438 | | $N_{min}$=327 $N_{max}$=333 | | N=309 | |
| | HR (95% CI) | *P* | HR (95% CI) | *P* | HR (95% CI) | *P* | HR (95% CI) | *P* |
| Gender (ref=male) | 0.89 (0.69-1.13) | .33 | 0.86 (0.66-1.11) | .25 | 1.01 (0.76-1.32) | .97 | 0.99 (0.73-1.33) | .94 |
| Age | 1.00 (0.99-1.01) | .70 | 0.99 (0.98-1.00) | .15 | 0.98 (0.97-0.99) | <.01 | 0.97 (0.96-0.99) | <.01 |
| Marital status (ref=no partner) | 1.19 (0.90-1.57) | .22 | 1.19 (0.89-1.59) | .24 | 1.43 (1.04-1.97) | .03 | 1.56 (1.11-2.19) | .01 |
| Working partially at baseline (ref=no) | 3.04 (2.34-3.95) | <.01 | 2.80 (2.13-3.68) | <.01 | 1.90 (1.44-2.50) | <.01 | 1.80 (1.34-2.41) | <.01 |
| Psychological job demands | 1.12 (0.90-1.38) | .31 | 1.12 (0.89-1.40) | .34 | 1.30 (1.03-1.65) | .03 | 1.24 (0.95-1.62) | .12 |
| Physical exertion | 0.86 (0.75-0.99) | .04 | 0.84 (0.68-1.03) | .09 | 0.88 (0.75-1.03) | .11 | 0.84 (0.65-1.09) | .19 |
| Posture | 0.85 (0.73-0.98) | .03 | 1.06 (0.86-1.31) | .60 | 0.85 (0.72-1.01) | .07 | 1.05 (0.81-1.38) | .70 |
| Skill discretion | 1.19 (0.93-1.53) | .16 | 0.95 (0.73-1.24) | .72 | 1.50 (1.14-1.99) | <.01 | 1.13 (0.82-1.57) | .46 |
| RTW self-efficacy | 1.26 (1.13-1.39) | <.01 | 1.19 (1.06-1.33) | <.01 | 1.19 (1.07-1.33) | <.01 | 1.20 (1.06-1.35) | <.01 |

HR (Hazard Ratio) of >1 indicates earlier RTW.

$N_{min}$: lowest number of respondents in the analyses.

$N_{max}$: highest number of respondents in the analyses.

## 5.4 Discussion

The present study investigated the relation between depressive symptoms, work characteristics and duration until full RTW among employees on long-term sickness absence. Firstly, the present study showed several relations between work characteristics and depressive symptoms: a higher level of decision authority, a lower level of psychological demands, more social support from the supervisor and a higher level of RTW self-efficacy were associated with a lower chance of reporting depressive symptoms at baseline. This is in line with earlier studies. For instance, Plaisier et al. [38] showed that the risk of depression increased with a higher level of psychological demands or a lower level of daily emotional support. High levels of (psychological) demands, low levels of decision latitude or job control, and low levels of social support at work were predictors of depression or other psychiatric disorders [39-41].

Secondly, depressive symptoms were strong predictors of the duration until full RTW. When we compared the employees with depressive symptoms to those without such symptoms, employees with depressive symptoms needed 30-50 days more days to full RTW at both follow-ups. This negative association between depressive symptoms and RTW is in line with previous research [e.g. 5-7].

Finally, although the hypothesis was that high levels of job and personal resources would shorten, and high levels of job demands would lengthen the time until full RTW for employees with depressive symptoms, this study showed only associations of RTW self-efficacy (a personal resource) and physical exertion (a job demand) with RTW. As expected, the higher the level of RTW self-efficacy at baseline, the earlier employees returned to work fully. This association of self-efficacy was reported in other studies as well [42, 43]. A lower level of RTW self-efficacy can lead to less confidence of employees that they will succeed in the work environment, leading them to avoid this setting. Consequently, these employees will need more time to fully RTW. Conversely, employees with a high level of RTW self-efficacy will have more confidence in their ability to face the challenges in the workplace and therefore their time to fully RTW will be shorter. A study by Nieuwenhuijsen, Noordik, Van Dijk and Van der Klink [44] shows that lower levels of fatigue, depressive symptoms, work pace and workload are associated with higher levels of RTW self-efficacy. Thus, although the present study shows that the role of job demands and job resources in the RTW process is limited, work characteristics may influence RTW self-efficacy.

One year after the start of sick leave, a higher level of physical exertion was related to a slightly longer duration until full RTW, which is consistent with the findings of Schultz et al. [45]. In their study RTW was related to lower physical

work demands. High levels of physical work demands are not only related to lower RTW rates, but also to long-term consequences as work disability [18, 29].

In addition to RTW self-efficacy and physical exertion, partial RTW at baseline was related to a shorter duration until full RTW. Partial RTW can be viewed as a type of gradual exposure to the work situation and may provide successful work experiences that challenge the dysfunctional beliefs an employee might have about work and RTW [46]. The modification of dysfunctional beliefs is one of the basic mechanisms that explain the effectiveness of (gradual) exposure [47, 48]. The findings of the present study are in line with research that showed that graded work exposure enhances full RTW [e.g. 46, 49].
Older employees and employees without a partner had a longer duration until full RTW. These results are similar to the findings in other studies [e.g. 17, 50]. One explanation for the association of age is that older employees may need more time to recover from their depressive symptoms and therefore have a longer duration until full RTW. Another possibility is that older employees more often aim at retirement or pre-pension instead of RTW. However, to our knowledge no study has investigated this.

The present study found only few associations between work characteristics and RTW for employees with depressive symptoms. This is not uncommon. Studies on workers with low back pain or common mental disorders also found few direct associations between work characteristics and RTW or disability [6, 45]. One explanation for these results draws on the populations that are used in these studies. The duration of sick leave at start of the study differs enormously across these studies. Some studies used an inclusion criterion of at least one day of sick leave, while in other studies employees had to report sick for at least 4 weeks. Studies that only include employees on long-term sick leave use a wide variation in the definition of long-term sick leave. Most studies excluded employees on sick leave for 12 weeks or more at baseline [e.g. 7, 30, 43]. The present study, however, included only people who were on sick leave for *at least* 13 weeks. Work characteristics may play a more important role in the RTW process for people on short-term sick leave. The employees' perceptions of job demands as work load and emotional demands, but also job resources as decision latitude, may influence the decision to RTW. Nevertheless, the present study finds no independent associations for job demands and job resource with RTW. If people are already for more than 13 weeks on sick leave, the RTW process may be more multi-layered with a more diverse range of factors that play a role in work resumption. Future research could address this issue and study similar populations longitudinally and investigate several predictors (work characteristics, disorder characteristics, individual factors and social and economic aspects) simultaneously.

### Strengths and limitations

The present study is among the first to examine the associations of work characteristics with RTW for sick-listed employees with depressive symptoms. All the participants in this study were absent for at least 13 weeks. The average sick leave duration when returning the first questionnaire was 19 weeks. In addition, the follow-up period was two years. Such populations have as yet not often been studied. Most studies about employees on long-term sick leave apply an exclusion criterion of maximum sick leave duration of 12 weeks at baseline and a one-year follow-up [e.g. 7, 30, 43]. The present study is among the very few studies that combine a follow-up period of two years with a sick leave period at baseline of more than 12 weeks.

Apart from these strengths, three main limitations of the present study must be noted. First, the initial response rate was only 26%. Given the heterogeneous sample of long-term sick listed employees and contamination of the national registration, estimated at around 40% and mostly due to lacking resumption notifications, a higher response rate was not expected. Further, although nonresponse analysis revealed some differences between responders and nonresponders, overall these differences were small. Note that a low initial response rate is not uncommon in this area. Baruch and Holtom [51] argued that the average response rate of studies in organizational research is often low because of difficulties reaching the target population and the reluctance of the people to respond. However, the response rate of the follow-ups of our study is high (i.e. 68% and 76%), especially when considering the long follow-up period of 20 months. Furthermore, the overall response of almost 800 respondents who returned all three questionnaires is high in comparison with other similar studies [e.g. 5, 24, 44].

Second, it should be noted that although RTW was measured prospectively, the data on the work characteristics were gathered retrospectively. The retrospective measurement may have led to a recall bias. Moreover, almost 60% of the participants were partially at work at baseline. Their present work experiences may have affected their opinion on the characteristics of their work prior to the start of their sick leave. Similarly, the response of those employees who were still fully on sick leave may have been influenced by their experiences during sick leave, because the baseline measurement was 19 weeks after the start of sick leave.

Third, unfortunately, this study only measured depressive symptoms and not (clinical) depression (e.g. diagnosis, disorder or sick leave origin). Other research has shown that the cut-off score that is used in the original 20-item CES-D scale (cut-off score of 16) is validated with DSM-III criteria for clinical depression [36]. In addition, the shortened CES-D has good predictive accuracy when compared to the 20-item version [36]. Therefore, it is hypothesized that the participants in this study who score above the cut-off score of the CES-D (10 or higher) have severe depressive symptoms that are at least close to a clinical depression. Depressive symptoms were not necessarily the cause of sick leave

in our sample. Employees could be on sick leave due to physical and/or psychological disorders.

## 5.5 Conclusion

The present study investigated the role of work characteristics in the RTW process of Dutch employees with depressive symptoms and long-term sick leave. This study shows that work characteristics are associated with depressive symptoms. Employees who work partially at baseline, have a higher level of decision authority, a lower level of psychological demands or who have a higher level of RTW self-efficacy, were less likely to report depressive symptoms at baseline. Furthermore, those who experience less social support from their supervisor are slightly more likely to have depressive symptoms. In addition, the duration until full RTW is longer for employees with depressive symptoms. Only few associations are found between work characteristics and RTW. Physical exertion, RTW self-efficacy, work status at baseline, marital status and age are significant independent predictors of full RTW. This study suggests that work characteristics may influence depressive symptoms, but that their role in the RTW process is limited for employees with depressive symptoms on long-term sick leave. Knowledge of prognostic factors of RTW for long-term sick-listed employees with depressive symptoms is still fragmented and limited. As RTW may be helpful in the recovery of depressive symptoms, a better insight in factors that facilitate RTW can lead to more adequate choices in the selection or development of interventions and can also be used to prevent long-term sickness absence.

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# 6

# The Design of a Brief Group Intervention for Employees on Long-Term Sick Leave[1]

[1] Huijs, J.J.J.M., Houtman, I.L.D., Taris, T.W., Lagerveld, S.E., & Blonk, R.W.B. *Disability and Rehabilitation,* submitted in 2018. Author Huijs designed the study and the intervention protocol, collected and analysed the data, interpreted the findings, and wrote the manuscript. Authors Houtman, Taris, Lagerveld and Blonk co-designed the study, interpreted the findings and edited the manuscript. Authors Blonk and Lagerveld co-designed the intervention protocol.

## Abstract

**Purpose:** The current study aimed to develop a brief evidence-based group intervention for employees on long-term sick leave. Participation in this intervention is expected to result in improvement in self-efficacy, resilience against setbacks and in a faster full return to work (RTW).

**Materials and methods:** A training protocol was developed based on the working mechanisms of skill development and motivational enhancement (enhancement of self-efficacy and anticipating setbacks). This protocol was tested in a mini-pilot within the Dutch police force.

**Results:** Participants of a mini-pilot (*N*=6) showed an overall increase in self-efficacy, resilience against setbacks and proactivity. In addition, the group setting appears to have distinct advantages, beside cost-effectiveness, such as recognition, social support and cohesion.

**Conclusions:** Both the working mechanisms as well as the group setting appear to work in this new target population of employees on long-term sick leave. The intervention showed promising results, but more extensive research is warranted to establish the effects of this group intervention. This future research should include more training groups with more participants in different organizations and sectors, a control group and a qualitative and quantitative evaluation.

## 6.1 Introduction

Sickness absence is an issue of continuous concern for most organizations. Especially, long-term sickness absence receives much attention due to its negative effects for the individual, the organization concerned and society. On an individual level, a decrease in quality of life and personal fulfilment, loss of sources of social support, loss of income and a decline in career prospects are examples of these negative effects [1-3]. The costs for the organization and society are also high because of sick leave, the loss in productivity, medical consumption, and disability benefits [4-6]. For example, it has been estimated that work-related injury and illness result in the loss of 3.3% of all work years in the EU, at an annual cost of roughly 476 billion Euro [7].

### *6.1.1 Intervention to enhance return to work*

In order to enhance and facilitate return to work (RTW) several interventions have been developed. There are indications that multimodal approaches, which combine interventions on health conditions and work-focused interventions, are especially effective in enhancing RTW [e.g., 3, 8-12]. Although this shows that there are effective interventions in promoting RTW for employees on sick leave, all these interventions are individually focused. Individual interventions appear to be very effective, while group interventions have several appealing features that may improve their effects. These appealing factors may be cohesion (feelings of trust, belonging and togetherness), social support, universality (recognition of shared experiences, feelings and problems), learning from peers, modelling, inspiration (instillation of hope) and interpersonal learning [13,14]. These features make group interventions especially appealing for employees who are on long-term sick leave because they often feel isolated and alienated. In addition, participants of group interventions may gain a boost in usefulness and feelings of value by helping other group members and they, in turn, may be inspired by other participants. Beyond the obvious cost advantage, group interventions may also be particularly useful for individuals who lack self-awareness or who have trouble taking control over their situation which are both necessary skills for individual therapy to be effective [15]. Furthermore, group interventions can provide participants with new information or new behaviour options that are not provided by an authority figure such as therapists but by peers and are therefore more likely to be adopted [15].
Some group interventions (or interventions that combined group sessions with individual interventions) which specifically focus on RTW have been carried out. Almost all involve some form of stress management training. Interestingly, the results of these interventions have been inconclusive. Some studies show (mod-

erate) positive effects on RTW or sickness absence rates [16,17], while other studies show no differences in RTW in comparison with a control group [18-20]. However, interventions that incorporate self-efficacy and resilience against setbacks as working mechanisms of the intervention and that focus on work, show promising effects on decreasing sickness absence rates and enhancing (mental) health [21,22].

To improve the effects of group interventions on RTW, a focus on self-efficacy may be important since self-efficacy showed to be an effective concept in several interventions and theoretical models for RTW [3,23,24]. Self-efficacy refers to an individual's belief in his or her own capacity to perform a specific behaviour successfully [25]. Self-efficacy is not only predictive of the initiation of a behaviour but also of persistence in the execution of that behaviour [25]. People with high levels of self-efficacy set themselves challenging goals and approach difficult tasks as challenges to be mastered instead of avoided. They also persevere in the pursuit of their goals and are better able to handle setbacks. When applied to the context of RTW, this reasoning implies that employees with lower levels of RTW self-efficacy are likely to be less confident that they will succeed when performing (again) in the work environment, leading them to avoid this setting. Consequently, their RTW process will be delayed. Conversely, employees with high levels of RTW self-efficacy will have more confidence in their ability to face the challenges in the workplace and will return to work faster.
Although self-efficacy is only one of many factors that may influence RTW, it is an appealing construct because of its modifiability. In contrast to other determinants of RTW behaviour, there are evidence-based techniques to influence self-efficacy [26]. Another reason why self-efficacy is an appealing target for interventions is that a diminished level of self-efficacy appears to be part of the disorder itself, especially in mental disorders where a positive self-concept is often diminished by the very nature of the disorder [27]. Research has also shown a link between physical disorders and low self-esteem, where an increasing severity of health problems is associated with progressively lower self-esteem [28]. In addition, higher levels of self-efficacy are associated with RTW in several physical health disorders [23,24,29].
Since self-efficacy is a powerful way to enhance RTW, it is important to make sure that employees have successful experiences during their RTW process. One way to increase successful experiences is through graded activity or partial RTW [10,25]. The challenge is to make sure that employees are able to handle setbacks or obstacles that they may encounter so that the steps that are taken in the graded activity provide successful work experiences. Consequently, these successful work experiences will challenge the dysfunctional beliefs that an employee may hold about work and RTW. The modification of dysfunctional beliefs is one of the basic mechanisms that explain the effectiveness of (gradual) exposure [30,31].

In conclusion, to enhance and fasten RTW, interventions that focus on enhancing self-efficacy or graded activity appear to be promising. Given the appealing features of group interventions, it is important to study the effects of a group intervention with this focus.

### *6.1.2 Aim of the current study*

The current study develops a brief group intervention for employees on long-term sick leave, intending to empower the participants and stimulate and facilitate RTW after long-term absence. Participation in this intervention is expected to result in improved self-efficacy and resilience against setbacks and in a shorter period until full return to work. In this article, the design of such an intervention and the results of a first mini-pilot are presented.

## 6.2 Intervention

The methodology of the brief group intervention that is developed for the current study is derived from the JOBS program which was especially designed to strengthen work related self-efficacy [32]. The JOBS program is an evidence-based intervention that was developed to reintegrate unemployed people. It is a short, focused group program that follows a protocol with a fixed order of exercises. The program consists of five consecutive four-hour sessions in which the participants practice skills that are valuable within the context of finding a job, such as setting goals, discovering strengths and passions, reflecting on future desires, expanding one's network and making plans of action to achieve their own goals. Despite the protocol, this variety of exercises allows for a tailored program which takes into account the needs of the participants. The program is participant-focused instead of trainer-focused, which means the participants are seen as the experts and information source. They themselves, as a group, come up with solutions for their own problems. Two facilitators lead the sessions, endorse and model the desired behaviour and facilitate the overall process. A group normally consists of 12 to 20 participants.
The working elements of the JOBS program among unemployed are skills enhancement (job seeking skills) and strengthening motivation by increasing both self-efficacy and resilience against setbacks [33]. By focusing on enhancing self-efficacy in combination with job seeking skills acquisition, participants gain a sense of mastery [25]. Active learning is one of the main means of learning in the intervention. Further, the facilitators model required and desired behaviour, facilitate discussion, give positive reinforcement and specific positive feedback in active learning exercises and disregard negative behaviour. Furthermore, the facilitators use their referent power (the extent to which the participants value and respect the facilitators) and emphasize that the participants themselves are

the experts. All this with the aim to create repeated successful experiences, which in turn should lead to an increase of self-efficacy. Another working element of the intervention is resilience against setbacks [34]. This refers to the ability to anticipate setbacks and the skills to cope with them. This is necessary because in life you cannot only have successful experiences and you will always encounter setbacks. By asking participants what their obstacles are for carrying out the desired behaviour and subsequently brainstorm about possible solutions for these obstacles, participants are better able to overcome these setbacks. Their resilience increases and they develop a sense of mastery to cope with these setbacks, so when confronted with real-life obstacles they have developed the problem-solving skills needed to cope with them [35].

The effectiveness of JOBS among unemployed has been established in numerous studies. Several studies in the United States, Finland and the Netherlands show positive effects on problem-solving skills, finding a job, job satisfaction, mental health and income earned for unemployed individuals, both on the short term as well as on the long run [32,36-39]. Building on the knowledge of the JOBS program, several other programs have been developed for populations in other transitions than form unemployment to employment. These focus on the transition from school to working life [40,41], on stimulating early school dropouts to go back to school or to start working [42] and on employees to be better prepared to manage their own careers [22]. These programs appear to have similar effects as the original JOBS program and strengthened our idea that a group intervention may also be effective in the transition from sick leave to RTW.

### *6.2.1 Focus of the current intervention*

In developing the current intervention, the principles and treatment style of the JOBS program are used but are applied to a different population, i.e. employees on long-term sick leave. So, this new intervention focuses on enhancing self-efficacy and resilience against setbacks for employees on long-term sick leave in order to promote full RTW. Further, the participant-focused approach and treatment style of giving positive reinforcement, specific positive feedback and disregarding negative behaviour are used. Most of the employees already will have experienced several setbacks or obstacles in their RTW process when they enrol in the intervention. Therefore, it is essential that participants encounter successful experiences and improve both their problem-solving skills and resilience against setbacks to stay motivated. Consequently, in the current intervention a prime focus is inoculation against setbacks.

Additional to enhancing self-efficacy and resilience against setbacks, the intervention is aimed at enhancing RTW-*skills*. Some of these skills are similar to the skills that are necessary for unemployed individuals to find a new job, like problem-solving skills and networking. However, the participants of the current intervention also require different skills in comparison with participants in the JOBS

program. First, job crafting skills are important to make sure that working facilitates recovery and RTW. Sometimes it is needed to temporary adjust a job to ensure that employees will experience successful work experiences and their self-efficacy will increase. As stated before, graded activity or partial RTW is a way to increase these successful work experiences [3,25]. Within the RTW-process, graded activity should not only focus on expanding the number of hours a person works but also on increasing the complexity and diversity of work tasks. A second skill that is specific for employees that resume their work, is designing the RTW-process and developing concrete individualized RTW plans. Research has shown that employees find it difficult to decide when they are ready to resume working and implement RTW solutions [43]. They have to learn what impact their health complaints have on their work ability and what they can and cannot do. Conversely, they must also learn the impact of work resumption on their health [43]. A third important RTW-skill is setting boundaries. Employees find it often difficult to protect themselves from exceeding their current capacity, especially when they have a high sense of responsibility [43,44]. As a result they often bite off more than they can chew. Therefore, in the current intervention new exercises that focus on these specific RTW-skills were added. We included some of the work-focused cognitive-behavioural therapy (W-CBT) exercises that have proven to be effective in promoting RTW in individually focused interventions [3]. Examples of these exercises are map out the current work situation, ways how work can help in the recovery process and a task analysis.

### *6.2.2 Setting of the current intervention*

Employees are eligible for the program when they are partially or fully on sick leave for at least four weeks and have a job to return to. Employees who are diagnosed with PTSD (post-traumatic stress disorder) are excluded from the intervention, not because of their symptoms but because of legal issues. Other than this, there are no specific inclusion or exclusion criteria regarding health complaints. So employees with physical health complaints, psychological health complaints or a combination can all take part in the intervention. A training group may best consist of 15 participants at maximum and should be led by two facilitators. The facilitators follow the intervention protocol which consists of a precise description of each session: an explanation of each exercise, the goals of this exercise and examples of follow-up questions for the discussion in the group [45]. The intervention consists of four four-hour sessions in two weeks. One month later there is another four-hour session for feedback, consultation and reinforcement. In the original JOBS program the intervention consists of five four-hours sessions in one week. However, this is too big of a burden for the current target population of employees on long-term sick leave. Another reason for spreading out the sessions over two weeks is that it gives participants a chance to reflect on what they learned, try out this new behaviour and share their expe-

riences in the following session. This format showed positive results in an intervention with young employees that aimed to enhance their career development skills [40].
In the sessions participants work on their personal values and passions, map out their current work situation, find out ways how work can help in their recovery and perform a task analysis. In addition, they work out what steps they can take to RTW, identify what their network looks like and how it can help them in returning to work. Furthermore, they turn their ideas into a plan of action. In the session one month later, participants share their experiences, discuss possible setbacks and update their action plan.

## 6.3 Mini pilot

### *6.3.1 Methods*

Within the Dutch police force, the sickness absence rate in 2016 is high (7%) in comparison with the average sickness absence rate in the Netherlands (3.8%) and also in comparison with similar professions (service professions 3.8%; public administration 5.1%; healthcare 4.8%) [46]. In addition, in 2013 a major restructuring of the Dutch police force started which also resulted in a new HR vision. In this new vision the focus is more on primary prevention, and more responsibility for return to work is placed with both the supervisor and the employee which is in line with the Dutch legislation. In the Dutch legislation an employer is obliged to continue to pay the wages or salary of their employee on sick leave at a minimum of 70% and a maximum of 100% for at least two years. In addition, employers are obliged to exert their strength to promote sustainable participation of the employee on sick leave and should give reintegration a maximum chance of succeeding. This two year period can be extended in case of insufficient effort. This context of high sickness absence rates and a major restructuring within the Dutch police force provided an excellent opportunity to test the new group intervention for employees on long-term sick leave. Therefore, a mini pilot of the group intervention was conducted to examine whether our approach could produce the expected effects on RTW. Employees were eligible to take part in the pilot when they were on partial or full sick leave for at least four weeks and there was no plan to fully return to work in the near future. Employees who were diagnosed with PTSD were excluded from the intervention. The intervention took place in December 2017/January 2018.
Six employees participated in the group intervention, three women and three men. They were on average 53.7 years old (range 49-61) and all worked within the police unit Rotterdam. Two of the participants worked as an employee ‘Intake & service’, the other four were police officers of different ranks and specialism. At the start of the group intervention, their average duration of sick leave was

13.9 months (range 4.5-22). Only one participant was still fully on sick leave, the others had partially returned to work (ranging from 40% of their contract hours to full contract hours, but not all tasks or irregular working hours or night shifts). To study the effects of the intervention interviews were carried out. Participants were interviewed face-to-face on two separate occasions: after the first four sessions and six months later (see Figure 1). The second time, five participants were interviewed, because one participant did not want to be interviewed anymore. In addition, three months after the first four sessions telephone interviews were conducted with the supervisors of five of the participants (one participant got a new supervisor right after the training, so this new supervisor could not give information about changes of this participant).

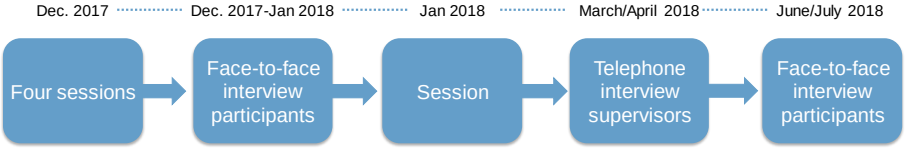


Figure 1 Timeline of the intervention and interviews

The interview protocol was based on the model of Kirkpatrick [47], which evaluates the effectiveness of (training) programs on four levels: reaction, learning, behaviour and results. The level of reaction measures customer satisfaction, i.e. how the participants feel about the training. The second level, learning, looks into the degree to which participants acquire the intended knowledge, skills and/or attitude. The degree to which participants apply what they learned during training when they are back at the job is the third level, behaviour. The fourth and highest level (results) measures the degree to which targeted outcomes like faster RTW, higher productivity, reduced costs occur as a result of the training, and identifies the effects of the applied behaviour. The interview with the supervisors only included the levels of behaviour and results, since they have no firsthand knowledge of how the participants feel about the intervention or what they have learned. In the first interview with participants, questions regarding the content, method, target group and preconditions of the training were added.

All interviews were audiotaped and the tapes were transcribed. The first author (JH) and a colleague (MvdT) separately analyzed three transcripts (two of participants and one of a supervisor) based on the four levels of the theoretical model of Kirkpatrick [47]. In line with the principles of thematic content analysis, the separate analyses were compared and common themes were identified during a consensus meeting [48]. This quality procedure served two purposes:

i. to ensure consistent and robust coding following the process evaluation, and

ii. to ensure that every emerging theme was directly supported by data from the interviews. After the researchers had agreed on a classification of themes, the remaining transcripts were divided between them.

Textual segments were digitally marked with codes in Microsoft Word and useful quotes were also marked.

### *6.3.2 Results of the mini pilot*

On the level of *reaction*, three themes were identified: satisfaction, the signing up-process and social climate. The participants were positive about the intervention, the facilitators and would recommend the intervention to others (see Table 1 for several quotes). Most of the participants signed up for the intervention without specific expectations (partly due to the insufficient information beforehand, see theme 'preconditions' of the training in the last paragraph of this section), but with an open attitude of learning something. One participant specifically signed up because of the focus on taking things into your own hands and being proactive. During the intervention the participants quickly formed a social group: they opened up, had a relationship of trust between them and supported each other.

On the level of *learning*, eight themes were distinguished: self-control, problem-solving skills, setting boundaries, communication, asking for help, social support, positive attitude and self-efficacy. Participants learned that they themselves had to take control into their own hands and act proactively in case they wanted to achieve something. This could mean they had to communicate more with their supervisor or colleagues, ask for help or gather information in order to speed up their work resumption. Furthermore, their problem-solving skills were improved by thinking in advance about what to do when 'the answer is no' and having an action plan which helps to keep going. In addition, breaking problems into smaller bits and confronting it piece by piece also helped to persevere. For some of the participants, setting boundaries and saying no was an important learning point of the intervention because it was (partly) the cause of their sick leave. Their stress levels were elevated because they did not know how to say no to all sorts of requests and this had led to sickness absence. Another aspect in their sickness absence or delay in RTW was a lack of communication with either the supervisor or colleagues. Part of being proactive is informing your supervisor what you want or how you want it and updating him/her on both the qualitative and quantitative aspects of the RTW process. Asking for help was also a vital learning aspect of the intervention. In order to get what you want you need to communicate and have to ask for it, otherwise nobody can help you. In the past, some of the participants tried to fix problems on their own and were afraid to ask colleagues for help. In the training they learned that asking for help is a sign of self-control and proactivity rather than weakness. The concept of universality showed to be an important aspect of the intervention: participants experienced they were

not the only one with these problems and recognized the same struggles of others. This created a bond and social support. The positive approach of the facilitators led to a positive attitude of the participants: focus on things that you can do or that do work instead of a focus on negativity or seemingly invincible obstacles. This can also have a positive influence on the people around you. All these learning aspects mentioned above are focused on and may lead to an increase of self-efficacy.

The themes on the third level, *behaviour*, are equal to the themes on the level of learning, the difference being that this level is about applying the learned behaviour. Participants increased in proactive and communicative behaviour in their RTW-process after the intervention, for example making a plan regarding their RTW process and informing their occupational physician or supervisor about it, being more decisive in their work and initiating meetings or conversations with their supervisor and being more open. The *supervisors* also noticed these changes in proactive behaviour and communication of their employees. They perceived more open-heartedness and more open communication. However, one supervisor mentioned that the employee still had a wait-and-see attitude. With respect to problem-solving skills and resilience against setbacks, especially the supervisors noticed improvement in behaviour: employees themselves come up with solutions and present them to their supervisor. As said, for some employees setting boundaries was an important lesson and they apply these lessons in daily practice for example by saying no to extra work tasks or setting clear deadlines for themselves and others. Participants who asked for help from their colleagues or supervisor learned that this was not frowned upon and actually was more efficient than fixing problems on your own. Two of the participants even applied what they had learned during the intervention to colleagues on sick leave and tried to pass on the mindset and philosophy of the intervention. Lastly, almost all supervisors noticed big changes in levels of self-efficacy and self-confidence of their employees.

Table 1 Some examples of quotes of the participants and supervisors during their interviews

| Source | Theme | Quote |
|---|---|---|
| Participant, first interview | Reaction, satisfaction | “I really learned a lot, but again that is because you discuss it with each other. And things that you come across with you can just talk about that”. |
| Participant, first interview | Learning, self-control | “The training made me realize I was way too passive. That was the main lesson for me”. |
| Participant, first interview | Learning, problem-solving skills | “What I didn’t think about before, and what I learned during this intervention, is to make a scenario for the next period. What if things don’t go as planned”? |

| Source | Theme | Quote |
|---|---|---|
| Participant, first interview | Learning, problem-solving skills | "That you should not make things too big. If you have a problem, you should cut it into smaller pieces and try to solve it one by one". |
| Participant, first interview | Learning, asking for help | "… the others said: dare to ask! Dare to ask! If I ran across something now I would…this is a barrier for me. Social services, shall I call them? But these people are all so busy. But then she told me: yes, but you are important too"! |
| Participant, first interview | Learning, social support | "So we discussed it and that way you learn from others and you hear how someone else copes with it". |
| Participant, second interview | Behaviour, self-control | "Sometimes you have to claim your moment. You have to send an e-mail saying I would like to have a meeting. And then I said: and the 6th of June I'm available and I already saw you are too. Before, I would never do this." |
| Supervisor | Behaviour, self-control | "She is more pro-active. I want to do more of these kinds of tasks. Beforehand she did the work that she was ordered to do. Now you see she takes things into her own hands and picks out her own work tasks. She just takes more control in her work". |
| Supervisor | Behaviour, setting boundaries | "Another supervisor asked her to perform certain tasks, after which she looked into the tasks and then she turned it down and said she wasn't ready for that. So she does set her boundaries. More than she used to do". |
| Supervisor | Behaviour, self-efficacy | "I think she shows more confidence, more pride. She has the nerve to be present now and that is very nice to see. Yes, absolutely, because before she acted like a wall-flower and now she plays an active role in the whole process". |
| Participant, second interview | Result, communication | "And you see when you hold back on information, they can't do anything about it then when you do open up a bit". |

The final level in the model of Kirkpatrick [47] is *results*. With regard to RTW, at the second interview four of the six employees had fully returned to work, and the other two had partially returned to work (one for 95% of the contract, the other had worked for 85% of the contract but due to a new operation now just started working again for 26% of the contract). One of the supervisors stated that, although the employee had fully returned to work, their level of productivity still needed to increase in order to keep up with the new standard. Several participants mentioned that their new behaviour gave them a sense of peace. Other results were that setting boundaries gave them a sense of euphoria and made it

easier for them to do it again in the future; by opening up they were more approachable for others; and their communication skills improved.

Besides the four levels of the model of Kirkpatrick [47], information regarding the content, method, target group and preconditions of the training was gathered in the first interview with the participants. The participants were satisfied with the *content* of the intervention, all topics were covered and the exercises were valuable. None of them could think of an exercise they found useless. In the first interview, one participant missed the theme of taking the last step to full RTW. This theme was part of the last session (one month later). Two participants mentioned that although the content of the intervention was similar to another intervention they had underwent, they had still learned from the present intervention because of the group setting and its stronger focus on self-control.

With regard to the *method* of the intervention, the participants most appreciated the flexibility the facilitators gave them in giving room for the stories and experiences of all participants. So although the facilitators followed the protocol, the participants felt that there was room for all their input and did not at all have the idea that a protocol was followed. Participants were also enthusiastic about the positive approach and that they themselves had to be active instead of listening to a trainer. For example, by working with hand-outs participants were asked first to think about a topic themselves, write down their thoughts on a hand-out and later discuss it with another participant or in the group. Although in the end you had a lot of paperwork. In addition, working with flip-overs was found to be helpful because you could easily retrieve what was spoken about in earlier sessions. Especially, when after their feedback the flip-charts were hanged in sequence throughout the room. Furthermore, they enjoyed that they not only got to share their experiences with others and learn from each other, but also were able to come up with possible solutions together as a group. The vibe of the sessions was also appreciated, it really felt as a group and not as a clinical setting or training that was given on an automatic pilot.

The participants felt that the intervention is suitable for everyone who gets stuck in their work even if they are not on sick leave, as long as they are open-minded and are not forced to participate. The high diversity within the group (a combination of physical and psychological complaints, diversity in how far along employees are in their RTW) was seen as an advantage. Only one participant thought it was better to separate different *target groups* and have separate groups for employees with physical complaints and psychological complaints because they differ too much in their RTW process. One of the participants was a former supervisor within the police force. This turned out to be very effective because this participant could share the point of view of a supervisor. The other participants valued this input. However, although it worked in this specific group, participation of a (former) supervisor can also be tricky. It is very important that everyone is able to speak freely so the supervisor cannot be a supervisor of any of the other participants. For the same reason it can be an issue when direct colleagues par-

ticipate in the same group. Participants should be able to speak freely in the group. In addition, participants opted on a similar intervention for supervisors who have to guide employees on sick leave.
Finally, regarding the *preconditions* of the intervention, the participants stressed the size of the group: they thought a small group of six participants was perfect and should not be expanded too much. They felt they could be more open-hearted and vulnerable and that there was a high level of trust and a safe climate. Most participants were approached by the HR-department to participate in this intervention. However, their supervisor, labour expert or occupational physician might be a better way to inform employees in the future. Also, the participants wished they had received more information before the start of the intervention, although they could not express what they had missed in the information folder. One participant opted for an intake before the start of the intervention. This would give the participants more information about the intervention. In addition, the facilitators would know more about the participants and would be able to use that information for the formation of the groups (for instance, to assign employees with physical and mental complaints to separate groups). All participants agreed with the planning of the intervention: four sessions in two weeks. The days in between the sessions gave room to reflect on what was discussed during the earlier sessions.

## 6.4 Discussion

This chapter describes the design of a brief group intervention for employees on long-term sick leave with a job to return to. It is one of the first group interventions with an evidence-based methodology for employees on long-term sick leave which focuses on promoting RTW. In the Dutch police force, a mini pilot of this intervention was conducted in one group with six participants and showed promising results.

The methodology of the group intervention is based on two elements: skills enhancement and strengthening motivation by increasing both self-efficacy and resilience against setbacks. This theoretical background sets the group intervention apart from other interventions. The working mechanisms and theoretical background have proven to be effective in other populations such as unemployed (to promote job seeking abilities and finding a job), early school dropouts (to stimulate going back to school or work) and (young) employees (to enhance career development) [e.g., 22,36,38,40-42,49]. Both the RTW-skills (such as setting boundaries, making a RTW plan) as well as self-efficacy and inoculation against setbacks, were increased by the intervention according to the participants themselves as well as their supervisors. The participants stated that the intervention led to an increase in self-confidence, responsibility, taking things into

one's own hands, setting boundaries and problem-solving skills. And these improvements appeared to be long lasting, i.e. at least six months after the start of the intervention the participants still noticed the effects. These changes were also seen by their supervisors. They noticed (although the level of improvement differed) that the employees were more open-hearted, more proactive, could handle setbacks better and communicated more openly with their supervisor or their co-workers. They also saw an increase in self-confidence and a more positive attitude. So, these working mechanisms also appear to work in this new setting of employees on long-term sick leave. This is in line with a review which shows that interventions are especially effective when they focus on both skill development and motivational enhancement [50]. In the current intervention this is achieved by focusing on RTW skills on the one hand, and enhancing a sense of mastery (self-efficacy) and inoculation against setbacks on the other hand.
The second distinctive feature of this intervention, the group setting, also showed to be valuable. Participants mentioned that it was helpful to learn they were not the only one in such a situation and to find recognition in the other participants. This recognition of shared experiences, feelings and problems (universality) is an important feature of group settings [13,14]. In addition, the group setting resulted in social support (especially from peers), active learning, giving and receiving tips from peers. Participants felt the group to be a small family in which they could be open-hearted, share their stories and experiences and help each other. Cohesion (feelings of trust, belonging and togetherness) is another distinguished characteristic of group interventions [13,14]. The participant-focused approach was effective, it increased the level of self-efficacy and problem-solving skills of the participants. And at follow-up four of the six employees had fully returned to work and the other two had partially returned to work.
The positive effects of the group intervention were accomplished despite the small number of participants. Normally, a group would exist of 12-20 participants instead of the current six participants. Although all participants felt that this small group resulted in more open-heartedness, a larger group may be necessary in order to effectively apply group mechanisms (such as rotation, getting enough input and different input of the group). However, due to the often complex problems this target population has and the experiences in this mini pilot, a group larger than 12 participants might be less effective or even counter effective. Nonetheless, because of the small sample and the lack of a control group, it is unclear if the intervention promoted RTW and more research is needed to establish the effects of the intervention.

### Strengths and limitations

To our knowledge, this is the first evidence-based group intervention to promote RTW that focuses on skill development as well as enhancing both self-efficacy and resilience against setbacks for employees on long-term sick leave. Besides the cost advantage, a group intervention has other appealing features like social

support, cohesion, universality and interpersonal learning. Therefore, this intervention is promising since sickness absence has a number of negative consequences for the individual, the organization as well as society. A second strength of the intervention is its evidence based background. The effectiveness of the JOBS program, on which this intervention is based, has been established in numerous studies, with the main difference being another target group.
However, several limitations should be kept in mind. First, although the mini pilot showed promising results, only one training group was involved. More research is needed to establish the effects of the group intervention. This future research should include more participants in a training group, a control group and a quantitative evaluation in addition to a qualitative evaluation. In addition, a longer follow-up period (for instance one year) should be included to see the long-term effects of this intervention especially on sustainable RTW. Second, the one mini pilot that was conducted took place in the specific setting of the Dutch police force. Although there are no signs that this group intervention would not work in another setting, it should be studied to test whether the results can be generalized.

## 6.5 Conclusion

A new evidence-based group intervention aimed at employees on long-term sick leave is developed. This training protocol is based on the working mechanisms of skill development and motivational enhancement (enhancement of self-efficacy and anticipating setbacks). The protocol is tested in a mini pilot within the Dutch police force and shows promising results. Participants of the mini pilot show an increase in self-efficacy, resilience against setbacks, proactivity and RTW-skills. In addition, the group setting has many advantages beside cost-effectiveness such as feelings of universality, social support and cohesion. More research is necessary to see whether the effects are robust and can also be displayed in other settings.

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# 7

# General Discussion[1]

[1] Solo-authored with helpful comments from Irene Houtman, Toon Taris and Roland Blonk.

Sustainable employability - defined as the employees' capacities to function in work throughout their working life - has become a key topic in the last decades [1,2]. The maintenance of physical, mental and cognitive abilities of the labour force is important to ensure that employees remain employable, stay healthy, motivated, competent and productive at least until the age of retirement. In addition, nowadays work is seen as something that can help in the recovery process of health problems: work keeps people healthy [3-7]. One of the routes to maintain sustainable employability is to diminish sick leave rates among workers. Especially long-term sick leave has several negative effects for employees. Employees who are on sick leave may not only lose part of a steady income, but also the five latent functions of employment: (1) Time structure; (2) Regular enforced activity; (3) Provision of a social status and identity; (4) A shared collective purpose; and (5) Regular social contacts outside the direct family [3,5,7,8].
In addition, long-term sickness absence has negative consequences for the organization concerned as well as society because of the high costs of sick leave, the loss in productivity, medical consumption, and disability benefits [9-11]. Thus, the costs of sick leave for all these stakeholders (employee, organization and society) could decrease if sick leave is prevented or if employees return to work (RTW) earlier.
In this thesis, we study both the prevention of sick leave as well as the promotion of RTW. The main objectives are to identify factors that influence prevention of sick leave and RTW, and to develop and evaluate interventions based on these factors. In doing so we focus on work characteristics as well as individual difference factors like self-efficacy. In addition, we specifically address mental retirement as an antecedent of sickness absence. Mental retirement refers to employees who are physically present at their work, but have already said their goodbyes mentally. Employees who seem to be counting the hours of each working day and the days until retirement and whose motivation to work has gradually shifted from intrinsic to extrinsic. 'My job' and 'my company' have become 'that job' and 'that company'. Four key questions are addressed in this thesis:

1. How can mental retirement be defined?
2. What is the effect of a participative action intervention program on reducing mental retirement?
3. What are the predictors of return to work for employees on long-term sick leave?
4. What is the effect of a newly developed group intervention aimed at return to work?

This chapter first presents and discusses the main findings of studies relating to the key questions addressed. Next, some methodological aspects of the studies are considered and recommendations are made for future research and practice.

## 7.1 Main findings

### How can mental retirement be defined and what is the effect of a participative action intervention program on reducing mental retirement?

With regard to preventing sick leave, we focused on the new concept of mental retirement. Employees who are mentally retired are physically present at their work, but have already said their goodbyes mentally. This may lead to more sickness absence. Mental retirement appears to consist of three aspects: developmental proactivity (a decline in interest in learning and developing), work engagement (reduced motivation for and connection with the job) and perceived appreciation (employees perceive themselves and their work as less valued and appreciated by others). First, we validated this concept by testing this three-factor structure of mental retirement (**Chapter 2**). The internal consistency was good (varying from .80 to .94 for the developmental proactivity scale and the work engagement scale, perceived appreciation was measured with one item) and a confirmatory factor analysis showed that the three-factor model fitted the data adequately, both in a general group of employees and across different subgroups (age, education, occupation). In addition, no differences in mean scores of mental retirement and its sub-components were found for different age groups. With regard to the other subgroups, higher educated employees reported higher levels of developmental proactivity and perceived appreciation, while the level of work engagement was higher for lower educated employees. Furthermore, police officers were more engaged than employees with office jobs.

Next to the validation of the concept of mental retirement, we also investigated the effects of a stepwise, bottom-up participatory program with a tailor-made intervention process addressing the level of mental retirement (**Chapter 3**). The program consisted of five steps:

1. Mindmapping sessions;
2. Diagnostic phase;
3. Choosing interventions;
4. Implementation of interventions; and
5. Evaluation.

This program showed a decrease in the level of mental retirement of employees who more actively participated in the intervention(s) that were implemented during step 4 of the program. In addition, a qualitative analysis showed the importance of a bottom-up, participatory design for the effectiveness of interventions. The participants of the sessions valued the possibility of giving their opinions, being taken seriously and having an influence on the content of the program. However, it turned out to be very challenging to keep up participants' commitment to the program and to implement changes when there were no researchers to keep them on track. Future research should not only study the effectiveness of this program further with an improved study design (control group, mul-

tiple follow-ups, several data sources), but also how the implementation of the interventions can be enhanced. For example, it should be studied what the effects are of appointing facilitators to a team to support and coach them especially in the implementation phase. These facilitators can be the researchers but also HR representatives or trainers of the organization.

### What are the predictors of return to work for employees on long-term sick leave and what is the effect of a newly developed group intervention aimed at return to work?

The second part of this thesis involves research on promoting RTW after sick leave. We started with increasing the insight in the predictors of RTW in different groups of employees who were on long-term sick leave. First, we examined whether these predictors varied among employees who were on sick leave due to three different self-reported reasons for sick leave: physical, mental or co-morbid physical and mental problems (**Chapter 4**). This study showed that partial RTW at baseline and lower age were strong predictors of earlier RTW in all three groups, and that RTW self-efficacy (i.e., the belief a person has in fulfilling work demands or a work role) predicted earlier RTW in two groups (sick leave due to physical problems and sick leave due to co-morbid problems). Interestingly, there was no association of RTW self-efficacy in the group with mental complaints. The effect of self-efficacy in this group may be overruled by other factors, such as stigmatization or social support. For example, a possible explanation is that the stigmatization of mental health problems in the workplace is high. As a result, employees might avoid their workplace more often and receive less support from their colleagues and supervisor, making it less likely to return to work. Other predictors of full RTW varied among groups. Most of these predictors are rather stable concepts and therefore hard to change in a short time, such as level of education, type of contract and children living at home. Employees with a low education needed more time to return to work fully (sick leave due to physical complaints). RTW took more time for employees with a permanent contract (for sick leave due to mental complaints as well as co-morbid complaints). In the group with both physical and mental problems as the (self-reported) cause of sick leave, the duration until full RTW was also longer for employees with children living at home or a lower level of active-problem-solving coping. All of the predictors found in this study were demographic characteristics and personal resources, no relations were found between health characteristics and work characteristics with duration until full RTW. Second, we studied the relations between work characteristics, depressive symptoms and duration until full RTW among long-term sick-listed employees (**Chapter 5**). Although several work characteristics (decision authority, psychological demands, supervisor support and RTW self-efficacy) were related to depressive symptoms, only two work characteristics were linked to time until full RTW. High levels of RTW self-efficacy (a personal resource) and low levels of physical exertion (a job demand) were

related to less time until full RTW. These two studies show that tailoring might improve the effects of interventions because the predictors of full RTW differ among groups. Furthermore, work characteristics may have a larger influence on whether or not employees return to work at all than on the duration until full RTW.

Based on the results of the predictors of RTW, we developed a brief evidence-based group intervention for employees on long-term sick leave (**Chapter 6**). This intervention was based on the working mechanisms of skill development and motivational enhancement (enhancement of self-efficacy and anticipating setbacks). In a first try-out (mini-pilot) within the Dutch police force, the intervention showed promising results. Participants reported an overall increase in self-efficacy, resilience against setbacks and proactivity. At follow-up (six months after the intervention), four of the six long-term sick-listed employees had fully returned to work and the other two had partially returned to work. Next to cost-effectiveness, the group setting of the intervention seemed to have distinct advantages, such as universality (recognition of shared experiences, feelings and problems), social support and cohesion (feelings of trust, belonging and togetherness). These features make group interventions especially appealing for employees who are on long-term sick leave because they often feel isolated and alienated. Nonetheless, because of the small sample and the lack of a control group, more research is necessary to see if the effects are robust and be found in other settings.

## 7.2 Interpretation of the findings

Skills demands and the labour market are rapidly changing, due to technical developments, globalization and innovations [12-13]. Organizations need to be more flexible and adaptable, which requires other competencies from employees than before. This causes employees' skills to become obsolete and endangers their sustainable employability. In addition, the Dutch working population is rapidly ageing due to lower birth rates, a decline in mortality rates, and an increase in official pension ages [14-15]. These two developments lead to an increasing pressure for maintenance of physical, mental and cognitive abilities of the labour force to ensure that employees remain employable and stay healthy, motivated, competent and productive at least until the age or retirement [1-2]. These developments may boost the interest in the concept of mental retirement.

### *7.2.1 The concept of mental retirement*

Our studies show that mental retirement is a reliable concept with three components: developmental proactivity, work engagement and perceived appreciation

[16,17]. Employees who are less mentally retired are more flexible and adaptable, making it likely they are more capable to deal with the change in skills demands. Perhaps mental retirement can be seen as a reciprocal connection: on the one hand, employees who have a higher level of work engagement may be more appreciated by their supervisors and colleagues. On the other hand, if employees perceive more appreciation of their supervisors and colleagues their level of work engagement may rise.

Mental retirement may have the connotation that it mostly applies to older employees. An often-made assumption is that employees who are closer to their actual retirement, will have higher levels of mental retirement. Especially since previous research has shown that older employees have a decline in interest and participation in learning activities and disengagement [18-20]. However, our study shows that levels of mental retirement do not differ between age groups and similarly the three sub-components of mental retirement do not differ between age groups either [17]. Our results indicate that mental retirement is not age-related, but perhaps it is more linked to the degree of work being motivating, by incorporating important work-related values [2]. For example, our results show that police officers have a higher level of work engagement than employees in office jobs. This may be due to the fact that for many police officers their job is not just a job, but a 'calling'. In addition, their work is often more versatile and has more variation than office jobs and there frequently is an immediate result of their actions. This indicates that to decrease the level of mental retirement, an organization should not specifically focus on their older employees but put effort in increasing the engagement of their employees as a collective.

### *7.2.2 Predictors of RTW*

We examined in a prospective cohort study which factors influence the RTW duration. Our results show that two predictors are important, especially in the RTW duration. The first one is *self-efficacy*. Our studies confirmed the essential role of self-efficacy in the RTW process [21,22]. In a longitudinal study, we found that the higher the level of RTW self-efficacy at baseline, the earlier employees returned to work, which is supported by earlier research [23-27]. Self-efficacy is not only predictive of the initiation of a behaviour but also of persistence in the execution of that behaviour [28]. People with high levels of self-efficacy set themselves challenging goals and approach difficult tasks as challenges to be mastered instead of avoided. They also persevere in the pursuit of their goals and are better able to handle setbacks. When applied to the context of RTW, this reasoning implies that employees with lower levels of RTW self-efficacy are likely to be less confident to be successful in performing (again) their work and less confident in handling setbacks, leading them to avoid the work setting. Consequently, their return-to-work process will be delayed. Conversely, employees with high levels of RTW self-efficacy will have more confidence in their ability to

face the challenges in the workplace and will RTW faster. Although self-efficacy is only one of many factors that may influence RTW, it is an appealing construct because of its modifiability. In contrast to other determinants of RTW behaviour, there are evidence-based techniques to influence self-efficacy [29].
According to Bandura [28], the most powerful way to improve self-efficacy is to enhance personal mastery. This can be done through positive reinforcement by success experiences regarding the target behaviour. One way to increase successful experiences during a RTW process is to enhance personal mastery through partial RTW. *Partial RTW* is the second important predictor of RTW. Partial RTW or graded work exposure (gradually exposing employees on sick leave to the work setting) may provide successful work experiences that challenge dysfunctional beliefs an employee might have about work and RTW [4]. Research has shown that graded work exposure enhances full RTW [4,21,22,28,30-32]. The challenge is to make sure that employees are able to handle setbacks or obstacles that they may encounter in the work environment and that the steps that are taken during partial RTW provide successful work experiences. Consequently, these successful work experiences will challenge the dysfunctional beliefs that an employee may hold about work and RTW. The modification of dysfunctional beliefs is one of the basic mechanisms that explain the effectiveness of (gradual) exposure [33,34].

*Work characteristics* have often been studied in relation to sickness absence and the onset of disorders. Yet, relatively few studies have examined the link between work aspects and RTW. The studies that have studied this link indicate a relation between some job demands or job resources and RTW [e.g., 35-41]. The role of work characteristics is especially interesting since of all the factors involved in the RTW process, employers can alter and subject work characteristics like job control, job demands and social support more easily to interventions and treatment than disorder-related or personal factors. However, in our studies we found few or no direct associations between work characteristics and RTW. Some other studies on workers with low back pain or common mental disorders also found few direct associations between work characteristics and RTW or disability [42,43].
One explanation for these different results can be the variations in the definition and measurement of RTW. Research shows that studies use various definitions of RTW outcomes, and the prognostic factors tend to differ across RTW outcomes [44,45]. More research is necessary to better understand the role of work characteristics in the RTW process. Another explanation draws on the different populations that are used. The duration of sick leave at the start of the study differed enormously across earlier studies. Some studies used an inclusion criterion of at least one day of sick leave, while in other studies employees had to report sick for at least 4 weeks or employees on sick leave for 12 weeks or more were excluded. Our study, however, included only people who were on sick leave

for at least 13 weeks. Work characteristics may play a more important role in the RTW process for people on short-term sick leave in comparison with long-term sick leave. The employees' perceptions of job demands as work load and emotional demands, but also job resources as decision latitude, may influence the decision to RTW. However, when employees are on long-term sick leave (as in our studies more than 13 weeks at baseline), the RTW process may be more multi-layered with a more diverse range of factors that play a role in work resumption decreasing the influence of work aspects on RTW. Therefore, interventions aimed at promoting RTW for employees on long-term sick leave may be better off focusing on other factors (such as RTW self-efficacy, promoting partial RTW and recurring contact between the supervisor and employee) than work characteristics.

### *7.2.3 Essential aspects of interventions for both decreasing mental retirement as well as promoting RTW*

To improve the effects of interventions on RTW, a focus on both self-efficacy as well as partial RTW may be important since they both appear to be an effective component in several interventions and theoretical models for RTW [4,23,24,30]. And although work characteristics may not have a clear influence on RTW, they may influence RTW self-efficacy. For example, a study by Nieuwenhuijsen, Noordik, Van Dijk and Van der Klink [46] showed that lower levels of fatigue, depressive symptoms, work pace and workload are associated with higher levels of RTW self-efficacy. This suggests that interventions regarding RTW should focus on enhancing self-efficacy and partial RTW.

Apart from these content-specific factors, there are several other features of interventions that have been proved to be effective in previous research. First, a participatory design of an intervention can be effective and can lead to feelings of joint ownership, control and responsibility, a greater sense of fairness and may smoothen the change process [47-51]. Second, a stepwise, tailor-made intervention process provides a framework for organizations that can be used to make suitable choices for interventions and increases the chance that the interventions that are implemented meet the specific needs of the target group better, that the action plans that are made together are more effective and that the results are better used [47,52,53]. Third, a group setting can have several appealing features that may further improve the effects of interventions. These appealing factors are cohesion (feelings of trust, belonging and togetherness), social support, universality (recognition of shared experiences, feelings and problems), learning from peers, modelling, inspiration (instillation of hope) and interpersonal learning [54,55]. Based on these findings, the two interventions that were examined in our studies (decreasing mental retirement and promoting RTW) incorporated these features. And although the RTW group intervention was only a mini-

pilot and the mental retirement program also had several limitations, our results suggest that these intervention features may be effective.

## 7.3 Methodological considerations: Strengths and limitations of the studies

Several methodological aspects, strengths as well as limitations, of our studies deserve consideration. First, both intervention studies are the first studies in their field. No other study has examined the effects of a program for diminishing mental retirement. Such a program may become more important because of the increasing interest in sustainable employability due to the rapid changes in skills demands in a changing labour market dealing with a fast aging of the workforce. The RTW group intervention was also the first evidence-based group intervention in the RTW field which focuses on skill development as well as enhancing both self-efficacy and resilience against setbacks for employees on long-term sick leave. The intervention also has an evidence-based background, since the effectiveness of the JOBS program (on which the intervention is based) has been established in numerous studies, with the main difference of having another target group such as unemployed, early school drop-outs and (young) employees [e.g. 56-60].

Second, both interventions are group interventions. Besides having a cost advantage as compared to individual interventions, a group intervention has other appealing features like social support, cohesion (feelings of trust, belonging and togetherness), universality (recognition of shared experiences, feelings and problems) and interpersonal learning. Therefore, this type of intervention is promising since sustainable employability gains in importance and sickness absence has a number of negative consequences for the individual, the organization and society.

Third, the studies on the predictors of RTW (Chapters 4 and 5) are among the very few that combine a follow-up period of two years with a sick leave period at baseline of more than 12 weeks. Most studies about employees on long-term sick leave apply an exclusion criterion of maximum sick leave duration of 12 weeks at baseline and a one-year follow-up [e.g. 24,38,41]. Populations of employees with a sick leave period at baseline of more than 12 weeks and a follow-up of more than one year have as yet only rarely been studied. Even though they are interesting since research has shown that the probability of RTW in sick-listed employees with mental disorders decreases after the first three months of sickness absence [61]. Our studies show the predictors of RTW for the group of employees that has not returned to work after three months. For example, work characteristics appeared not to have an influence on RTW for this group while RTW self-efficacy was associated with RTW.

With respect to our studies on predictors of RTW, one limitation is that although RTW was measured prospectively, the data on the work characteristics were gathered retrospectively. This retrospective measurement may have led to a recall bias, especially since almost 60% of the participants were partially at work at baseline. Their present work experiences may have affected their opinion on the characteristics of their work prior to the start of their sick leave. Similarly, the responses of those employees who were still fully on sick leave may have been influenced by their experiences during sick leave, because the baseline measurement was 19 weeks after the start of sick leave. A longitudinal design with work characteristics being measured before the start of sick leave is preferable, but such studies are difficult to conduct.

Our studies examining the effects of interventions (the mental retirement program as well as the RTW group intervention) both had a similar limitation. In both studies a control group was missing. In the mental retirement study, even employees who reported that they had not actively participated in the intervention(s) had been exposed to the program. That is, all members of a department or team were informed about the mindmapping sessions, the results of the baseline questionnaire and the interactive sessions in which plans of actions were made for the intervention(s). However, a control group was formed based on the level of exposure (i.e. the level of active participation) to the interventions that were implemented. Using such process evaluation and incorporating the measurement of intervention exposure in participants' samples is a way of coping with problems that often occur in applied occupational health research [62,63]. In this field of research, the interventions and the context are often complex and therefore hard to control, making it difficult to establish a randomized controlled trial (RCT) with a control and intervention group [62-65]. Additionally, a RCT might not be the golden standard for examining the effects in applied occupational health research, because even when a RCT is performed with success, the question remains whether the conclusions can be generalized to other organizations and individuals or that the results only apply for a selected sample of individuals [65,66]. Using process evaluation instead makes it possible to take into account the complex, chaotic and uncontrollable organizational settings. In the RTW group intervention, it was not possible to use process evaluation to create a control group. Here a control group should be created by employees on long-term sick leave who work in the same (police) unit but who did not participate in the group intervention. However, in our study it was not feasible to compare the results of the participants with a control group.

## 7.4 Recommendations for future research

This thesis has yielded some interesting findings that ask for further research addressing several unanswered questions and opportunities. With respect to the

concept of mental retirement and the intervention program to reduce or prevent mental retirement, future research should be longitudinal in nature and should also focus more on exploring the predictors and the effects of mental retirement. This thesis has provided indications that the concept of mental retirement is reliable across several sub-populations and is not (necessarily) related to age. And although promising, the concept itself needs more conceptualization since the predictors and effects of mental retirement are still unclear. Future research should therefore be aimed at building a conceptual model of mental retirement including predictors and effects of the concept. Exploring the predictors of mental retirement may also lead to improvements of the mental retirement program. It can not only help to select interventions (step 3 of the program: choosing interventions), but it will also increase the chance that these interventions will be effective in reducing the level of mental retirement. And although there are indications that mental retirement might have negative consequences for employees (e.g., lower employability and mental health), for the organization (reduced productivity, absenteeism, profit loss) and society in general (costs due to early retirement, well-being), more research is needed to study the effects of mental retirement.

Although the RTW group intervention showed promising results, more extensive research is warranted to establish the effects of this group intervention since our study consisted of one mini-pilot in the specific setting of the Dutch police force. This future research should therefore include more training groups with more participants in different organizations and sectors in order to establish the effects of this group intervention. This pilot study has shown that the working mechanisms of skill development and motivational enhancement (enhancement of self-efficacy and anticipating setbacks) of this group intervention that have proven to be effective in other target groups appear to also be effective in this new target group of employees on long-term sick leave. However, more research is needed to establish these effects. In addition, an interesting opportunity is to adapt the intervention protocol to make it (also) suitable for employees who are still working but have a high frequency of short-term sick leave or whose career development is hindered in order to prevent long-term sick leave. In addition, a longer follow-up period (for instance one year) should be included to see the long-term effects especially on sustainable RTW. Furthermore, new research on the effects of the RTW group intervention should include both a qualitative and a quantitative evaluation.

Future intervention studies, both for the mental retirement program as well as the RTW group intervention, should use a control group (with employees that have no knowledge of the intervention at all) and compare it to an intervention group that did participate in the mental retirement program or RTW group intervention to see what the effects are of the interventions. Finally, in the field of sick leave and RTW studies, other sources of data should be considered since most studies, including the ones in this thesis, only make use of self-report which can

be prone to recall bias. These other sources of data can be organizational information such as productivity numbers, level of absenteeism in the organization or relapse rates. In addition, supervisors or colleagues can be asked about the changes they observe in the employee.

## 7.5 Implications for practice

As long-term sick leave has several negative consequences for the employee him- or herself as well as the organization and the society as a whole, it is important to create a situation that improves the odds that employees are healthy and do not need to report sick. Further, when sick leave does occur, it is essential to make sure partial RTW is promoted and that self-efficacy is increased by successful work experiences. Our studies have several implications for practice to help achieve this. First, (newly developed) interventions should be theory-based and be built on the specific predictors of RTW. One important element that should be incorporated into an intervention is enhancing self-efficacy. A high level of self-efficacy not only increases the chance of initiation of a specific behaviour but it also increases the chance that the person will persevere the execution of that behaviour. Our studies have shown that this is an essential concept in the RTW process. Employees with high levels of RTW self-efficacy will have more confidence in their ability to face the challenges in the workplace and RTW faster. One way to improve self-efficacy is to enhance personal mastery. This can be done through positive reinforcement by increasing successful experiences during the RTW process. Partial RTW can provide successful work experiences that challenge the dysfunctional beliefs an employee might have about work and RTW. The challenge is to make sure that employees are able to handle setbacks or obstacles that they may encounter so that the steps that are taken in the graded activity provide successful work experiences.

Second, our results underline the importance of group-based interventions. Group interventions have several appealing features that may improve their effects. Some of these appealing factors are cohesion (feelings of trust, belonging and togetherness), social support, universality (recognition of shared experiences, feelings and problems), learning from peers, modelling, inspiration (instillation of hope), interpersonal learning and of course the cost advantage. In addition, participants of group interventions may gain a boost in usefulness and feelings of value by helping other group members and they, in turn, may be inspired by other participants. These features make group interventions especially appealing for employees who are on long-term sick leave because they often feel isolated and alienated. Although these appealing features of group interventions have often been established, only few evidence-based group interventions in the RTW field have been developed and tested thus far. In order for these group interventions to fully live up to their expectations, it is important that where

possible these interventions should have a participatory design. This will lead to feelings of joint ownership, control and responsibility, a greater sense of fairness and may smoothen the change process.

Third, although in applied research it is hard to control the interventions and the context settings, this type of research is necessary to improve our knowledge. Employees who are on sick leave or who are close to reporting sick also have to navigate in a very complex and multi-layered context. So, to intervene in this process and to prevent sick leave or to promote RTW, the research that is conducted should be carried out in the same surroundings and not in a controlled setting. Action research where the researchers thoroughly and closely follow what happens, continuously evaluate and act on the interim results can be a way to deal with these context settings. Especially when action research is combined with a participatory intervention. Action research may also be more appealing for organizations to participate in. In action research organizations do not have to wait until the end of the study to see the results, but results are continuously shared and action and research are achieved at the same time. Alongside the implementation process, practical problems may be addressed and managed accordingly.

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# Summary

The objectives of this dissertation are to identify factors that influence prevention of sick leave and return to work (RTW), and to develop and evaluate interventions based on these factors. Below a summary is provided per chapter of this dissertation.

**Chapter 1** provides an overall introduction that explains the relevance of improvement of interventions that prevent sick leave or promote RTW for employees. Work provides not only a steady income but also offers other benefits such as time structure, regular activity, social status, a shared purpose and social contacts. These benefits can be lost when people are absent from their work for a long period due to sickness. Especially long-term sick leave has several negative effects and high costs for both employees as well as the organization concerned and society in general. These negative effects and high costs could decrease if either sick leave is *prevented* or if employees would *return to work* earlier. It is therefore important that effective interventions are implemented.
Loss of the benefits, that work provides, may not only emerge when an employee is on long-term sick leave, but also when an employee mentally withdraws from his or her job. We call this *mental retirement*. This new concept of mental retirement refers to employees who seem to be counting the hours of each working day and the days until retirement and whose motivation to work has gradually shifted from intrinsic to extrinsic. ‘My job’ and ‘my company’ have become ‘that job’ and ‘that company’. Mental retirement may be an interesting new topic in the prevention of sick leave, since the decision to report sick also depends on the level of commitment to the job.
In addition to preventing sick leave, research is also needed to enhance RTW. Existing research mainly focuses on predictors of sick leave and the onset of disorders, but not on the factors that may promote or hinder RTW. To design interventions that effectively promote RTW, it is important to gain more insight into the predictors of RTW.
Research has shown that several features are important for interventions to be effective. Firstly, a tailor-made approach is advocated. Tailoring improves the utilization of the results, helps to choose the interventions that meet the specific needs of the organization and make effective action plans. Secondly, a stepwise approach is effective by providing a framework for organizations that can be used to make suitable choices for interventions. A third important feature is a participatory approach. By using the knowledge, skills and perceptions within the team, a feeling of joint ownership is created during the program. Fourth, group interventions have several appealing features that may improve their effects, such as recognition of shared experiences, social support and learning from peers. Research has also shown that there are indications that multimodal approaches, which combine interventions on health conditions and work-focused interventions, are especially effective in enhancing RTW.

**Chapter 2** is centred around the research question *'How can mental retirement be defined?'* Employees who are mentally retired are physically present at their work, but have already said their goodbyes mentally. Based on an initial exploration, mental retirement appears to consist of three aspects: developmental proactivity (a decline of interest in learning and developing), work engagement (reduced motivation for and weaker connection with the job) and perceived appreciation (employees perceive themselves and their work as less valued and appreciated by others). We validated this concept by testing this three-factor structure of mental retirement in a sample of employees of five different public and private organizations (*N*=867). Three departments of the National Police participated: two departments of police officers and one facility department. The other four organizations were an archive department of the government, a department of the Dutch Ministry of Education that provides student financing, one location of an organization that implements national insurance schemes in the Netherlands and one team of management assistants of a health technology organization.
The internal consistency of mental retirement was good (with Cronbach's alfa varying from .80 to .94 for the developmental proactivity scale and the work engagement scale). In addition, a confirmatory factor analysis showed that the three-factor model fitted the data adequately. Furthermore, analysis showed that this three-factor model was stable across different subgroups (age (<50 years; ≥50 years), level of education (low, intermediate, high) and occupation (police officers and office jobs)). This adds to the validity of the concept of mental retirement. In addition, this study showed that the level of mental retirement differs across these subgroups. Higher educated employees reported higher levels of developmental proactivity and perceived appreciation, while the level of work engagement was higher for lower educated employees. Furthermore, police officers were more engaged than employees with office jobs. However, no differences in mean scores of mental retirement and its sub-components were found for age. Since sustainable employability is more and more essential in today's society, there is an increasing pressure for maintenance of physical, mental and cognitive abilities of the labour force. The prevention of mental retirement may play an important role in the maintenance of these abilities. And although promising, more research is needed on mental retirement in order to build a conceptual model of mental retirement including predictors and effects of the concept.

**Chapter 3** provides an answer to the research question *'What is the effect of a participative action intervention program on reducing mental retirement?'* In a prospective cohort study with a one-year follow-up among 683 employees of three organizations, the effects of this program were tested. Three departments of the Dutch National Police participated: two departments of police officers and one facility department. The other two organizations were an archive department of the Dutch government and one location of a non-profit organization that im-

plements national insurance schemes in the Netherlands. The program consists of five steps:

1. Mindmapping sessions;
2. Diagnostic phase;
3. Choosing interventions;
4. Implementation of interventions; and
5. Evaluation.

Multilevel analysis (*N*=466) showed no overall effect of the program on mental retirement and its sub-components. However, when taking into account the level of active participation in the intervention(s) that were implemented during step 4 of the program, a more active participation was linked to a lower level of mental retirement and higher levels of developmental proactivity and work engagement. In addition, a qualitative analysis showed the importance of the bottom-up, participatory design. The participants of the sessions valued the possibility of giving their opinions, being taken seriously and having an influence on the content of the program. The specific features of the mental retirement program (participatory design and the stepwise, tailor-made intervention process) might be more important in explaining the effects that were found in the present study than the specific interventions that were implemented in each team during step 4 of the program. However, it turned out to be very challenging to keep up participants' commitment to the program and to implement the interventions when there were no researchers to keep them on track. Future research should study the effectiveness of this program further with an improved study design. In addition, it should be studied what the effects are of appointing facilitators to a team to support and coach them, especially in the implementation phase. These facilitators can be the researchers but also HR representatives or trainers of the organization.

**Chapter 4** answers the research question: *'What are the predictors of return to work for employees on long-term sick leave?'* In a prospective cohort study with a two-year follow-up among 682 Dutch employees predictors of RTW were studied. These employees were on long-term sick leave due to three different self-reported reasons for sick leave: physical (52.6%), mental (23.3%) or co-morbid physical and mental problems (24.0%). On average they were sick-listed for 19 weeks at baseline. This study showed that partial RTW at baseline and lower age were strong predictors of earlier RTW in all three groups, and that RTW self-efficacy (i.e., the belief a person has in fulfilling work demands or a work role) predicted earlier RTW in two groups (sick leave due to physical problems and sick leave due to co-morbid problems). Other predictors of full RTW varied among groups. Most of these predictors are either rather stable concepts that are hard to change in a short time or factors that are practically not always feasible to change in a short time, such as level of education, type of contract and children living at home. Employees with a low education needed more time to

return to work fully (sick leave due to physical complaints). RTW took more time for employees with a permanent contract (both for sick leave due to mental complaints as well as co-morbid complaints). In the group with both physical and mental problems as the (self-reported) cause of sick leave, the duration until full RTW was also longer for employees with children living at home or a lower level of active-problem-solving coping. All of the predictors found in this study were demographic characteristics and personal resources, no relations were found between health characteristics and work characteristics with duration until full RTW.

The research question *'What are the predictors of return to work for employees on long-term sick leave?'* was also the focus of **Chapter 5**. In the same prospective cohort study as used in Chapter 4, we examined the relations between work characteristics, depressive symptoms and duration until full RTW among long-term sick-listed employees (*N*=883). RTW took longer for employees with depressive symptoms at baseline. Although several work characteristics (decision authority, psychological demands, supervisor support and RTW self-efficacy) were related to depressive symptoms, only two work characteristics were linked to time until full RTW. Employees with high levels of RTW self-efficacy (a personal resource) and low levels of physical exertion (a job demand) took less time to fully return to work. The two studies that are described in Chapters 4 and 5 show that the predictors of full RTW differ among groups which indicates that tailoring might improve the effects of interventions. Furthermore, work characteristics may have a larger influence on whether or not employees return to work at all than on the duration until full RTW.

**Chapter 6** focuses on the question *'What is the effect of a newly developed group intervention aimed at return to work?'* Based on the results of the predictors of RTW, we developed a brief evidence-based group intervention for employees on long-term sick leave. This intervention was based on the working mechanisms of skill development and motivational enhancement (enhancement of self-efficacy and anticipating setbacks). By focusing on enhancing self-efficacy in combination with RTW skills acquisition, participants gain a sense of mastery. Further, the program is participant-focused instead of trainer-focused, which means the participants are seen as the experts and information source. The participants themselves, as a group, come up with solutions for their own problems. In addition, the treatment style of giving positive reinforcement, specific positive feedback and disregarding ineffective behaviour is used. Employees were eligible for the program when they were partially or fully on sick leave for at least four weeks and had a job to return to. There were no specific inclusion or exclusion criteria regarding health complaints. So employees with physical health complaints, psychological health complaints or a combination could all take part in the intervention. In a mini-pilot within the Dutch police force (*N*=6,

average sick leave of 13.9 months), the intervention showed promising results. Participants showed an overall increase in self-efficacy, resilience against setbacks and proactivity. At follow-up (six months after the intervention), four of the six employees had fully returned to work and the other two had partially returned to work. In addition, the group setting of the intervention appeared to have distinct advantages, beside cost-effectiveness, such as universality (recognition of shared experiences, feelings and problems), social support and cohesion (feelings of trust, belonging and togetherness). These features make group interventions especially appealing for employees who are on long-term sick leave because they often feel isolated and alienated. Nonetheless, because of the small sample and the lack of a control group, more research is necessary to see if the effects are robust and can also be displayed in other settings.

**Chapter 7** presents a general discussion of this dissertation. First, our main findings are described for each of the research questions presented in the first chapter. Secondly, this chapter reflects in greater detail upon the findings of our studies and discusses the practical implications.
It is concluded that self-efficacy plays an important role in the RTW process. Employees with high levels of RTW self-efficacy will have more confidence in their ability to face the challenges in the workplace and will return to work faster. Although self-efficacy is only one of several factors that may influence RTW, it is an appealing construct because of its modifiability. In contrast to several other determinants of RTW behaviour, there are evidence-based techniques to influence self-efficacy. In addition, our studies show little or no direct associations between work characteristics and RTW. Therefore, interventions aimed at promoting RTW for employees on long-term sick leave may be better off focusing on increasing self-efficacy than on work characteristics.
Apart from these content-specific factors, there are several other factors that improve the impact of interventions. First, a participatory design of an intervention can be effective and can lead to feelings of joint ownership, control and responsibility, a greater sense of fairness and may smoothen the change process. Second, a stepwise, tailor-made intervention process provides a framework for organizations that can be used to make suitable choices for interventions and increases the chance that the interventions that are implemented meet the specific needs of the target group better, that the action plans that are made are more effective and that the results are better used. Third, a group setting can have several appealing features that may improve the effects of interventions. These appealing factors are cohesion (feelings of trust, belonging and togetherness), social support, universality (recognition of shared experiences, feelings and problems), learning from peers, modelling, inspiration (instillation of hope) and interpersonal learning. The two interventions that were examined in our studies (decreasing mental retirement and promoting RTW) incorporated these features. And although the RTW group intervention was only a mini-pilot and the mental

retirement program also had several limitations, our results suggest that these intervention features may be effective.

To conclude, this dissertation has provided insights in the new concept of mental retirement and the RTW process and offered two interventions that may be used to decrease the level of mental retirement in organizations and promote RTW for employees on long-term sick leave.

# Samenvatting

Het doel van dit proefschrift is om factoren te identificeren die van invloed zijn op het voorkómen van ziekteverzuim en bevorderen van werkhervatting. Daarnaast is het doel om interventies, gebaseerd op deze factoren, te ontwikkelen en te evalueren. Hieronder volgt een samenvatting per hoofdstuk van dit proefschrift.

**Hoofdstuk 1** geeft een algemene introductie van het belang om interventies ter voorkoming van ziekteverzuim en bevordering van werkhervatting van werknemers te verbeteren. Werk voorziet niet alleen in een stabiel inkomen, maar het levert ook andere voordelen op zoals structuur, activiteit, sociale status, een gedeeld doel en sociale contacten. Deze voordelen kunnen verdwijnen op het moment dat mensen langdurig op hun werk afwezig zijn vanwege ziekte. Met name langdurig verzuim brengt verschillende negatieve gevolgen en hoge kosten met zich mee voor zowel werknemers als de betreffende organisaties en de samenleving in zijn geheel. Deze negatieve gevolgen en hoge kosten zouden verminderd kunnen worden als ziekteverzuim wordt *voorkómen* of als werknemers sneller het werk *hervatten*. Daarom is het belangrijk dat er effectieve interventies worden geïmplementeerd.
Het verlies van de voordelen waarin werk voorziet, ontstaat mogelijk niet alleen bij langdurig verzuim maar ook als een werknemer mentaal afstand neemt van zijn of haar baan. Wij noemen deze gevoelens van disconnectie van het werk en de organisatie *mentaal pensioen*. Het nieuwe begrip mentaal pensioen verwijst naar werknemers die de uren tot het einde van de werkdag en de dagen tot hun pensioen lijken af te tellen en wiens motivatie geleidelijk van intrinsieke naar extrinsieke motivatie is verschoven. ‘Mijn baan’ en ‘mijn organisatie’ zijn ‘die baan’ en ‘die organisatie’ geworden. Mentaal pensioen is mogelijk een interessant nieuw onderwerp in het voorkómen van ziekteverzuim, omdat de beslissing om je ziek te melden ook bepaald wordt door de mate van verbondenheid met het werk.
Naast het voorkómen van ziekteverzuim is er ook onderzoek nodig om werkhervatting te bevorderen. De bestaande literatuur focust zich met name op de voorspellers van ziekteverzuim en het ontstaan van klachten, maar niet zozeer op factoren die werkhervatting belemmeren of bevorderen. Om interventies te ontwerpen die effectief werkhervatting bevorderen is meer inzicht in de voorspellers van werkhervatting nodig.
Onderzoek heeft laten zien dat meerdere kenmerken van belang zijn voor de effectiviteit van interventies. Ten eerste is een maatwerk-benadering van belang. Maatwerk verbetert het gebruik van de resultaten, helpt interventies te kiezen die passen bij de specifieke behoeften van een organisatie en vergroot de kans op effectieve actieplannen. Ten tweede laat onderzoek zien dat een stapsgewijze benadering effectief is, doordat het een raamwerk biedt aan organisaties om passende keuzes te maken voor interventies. Een derde belangrijk kenmerk is een participatieve aanpak. Door gebruik te maken van de kennis, kunde en ideeën van een team ontstaat er een gevoel van gedeelde verantwoordelijkheid.

Ten vierde hebben groepsinterventies aantrekkelijke kenmerken waardoor effecten verbeterd worden, zoals herkenning, sociale steun en leren van gelijken. Onderzoek heeft laten zien dat er aanwijzingen zijn dat multimodale aanpakken, waarbij interventies op gebied van gezondheid gecombineerd worden met interventies die een focus op werk hebben, heel effectief zijn in het bevorderen van werkhervatting.

**Hoofdstuk 2** richt zich op de onderzoeksvraag *"Hoe kan mentaal pensioen worden gedefinieerd?"* Werknemers die mentaal gepensioneerd zijn, zijn fysiek aanwezig op hun werk, maar hebben mentaal al afscheid genomen. Gebaseerd op een eerste verkenning lijkt mentaal pensioen uit drie onderdelen te bestaan: proactieve leeroriëntatie (een afname in interesse in leren en ontwikkelen), bevlogenheid (verminderde motivatie voor en verbondenheid met het werk) en ervaren waardering (werknemers kennen zichzelf en hun werk minder waarde toe en voelen zich minder gewaardeerd door anderen). We hebben dit begrip gevalideerd door de driefactor-structuur van mentaal pensioen te testen in een steekproef van werknemers van vijf verschillende publieke en private organisaties ($N$=867). Drie teams van de Nationale Politie hebben deelgenomen: twee basisteams van agenten en één facilitaire afdeling. De andere vier organisaties waren een archiefdienst van de overheid, een afdeling van het Ministerie van Onderwijs, Cultuur en Wetenschap, een locatie van de uitvoerder van volksverzekeringen in Nederland en een team van managementassistenten van een organisatie op het gebied van gezondheidstechnologie.
De interne consistentie van mentaal pensioen was goed (de waarde van Cronbach's alfa varieerde van .80 tot .94 voor de proactieve leeroriëntatie en bevlogenheidsschaal). Tevens liet een confirmatieve factoranalyse zien dat de driefactor-structuur goed bij de data paste. Daarnaast bleek dat de driefactor-structuur stabiel was over verschillende subgroepen heen (leeftijd (<50 jaar; ≥50 jaar), opleidingsniveau (laag, middel, hoog) en beroep (agent en kantoorbaan)). Dit draagt bij aan de validiteit van het begrip mentaal pensioen. Ook liet dit onderzoek zien dat de mate van mentaal pensioen verschilde tussen deze subgroepen. Hoger opgeleide werknemers rapporteerden hoge niveaus van leeroriëntatie en ervaren waardering, terwijl de mate van bevlogenheid hoger was voor lager opgeleide werknemers. Daarnaast bleken agenten hoger te scoren op bevlogenheid dan kantoorpersoneel. Er werden echter geen verschillen gevonden in de mate van mentaal pensioen of de drie onderdelen hiervan qua leeftijd. Omdat duurzame inzetbaarheid steeds belangrijker wordt in de hedendaagse samenleving, is er een toenemende druk op het onderhouden van de fysieke, mentale en cognitieve vaardigheden van de beroepsbevolking. Het voorkómen van mentaal pensioen kan een belangrijke rol spelen in het onderhouden van deze vaardigheden. En ook al is mentaal pensioen een veelbelovend begrip, meer onderzoek is nodig naar mentaal pensioen zodat ook een conceptueel model

gebouwd kan worden inclusief de voorspellers en effecten van mentaal pensioen.

**Hoofdstuk 3** geeft een antwoord op de onderzoeksvraag *"Wat is het effect van een participatief actieprogramma voor vermindering van mentaal pensioen?"* In een prospectief cohort onderzoek met één jaar follow-up onder 683 werknemers uit drie organisaties zijn de effecten van dit programma getest. Drie teams van de Nationale Politie deden mee: twee basisteams van agenten en één facilitaire afdeling. De andere twee organisaties waren een archiefdienst van de overheid en een locatie van de uitvoerder van volksverzekeringen in Nederland. Het programma bestaat uit vijf stappen:

1. mindmap sessies;
2. diagnose fase;
3. kiezen van interventies;
4. implementeren van interventies; en
5. evaluatie.

Multilevel analyses (*N*=466) lieten geen effect zien van het programma op mentaal pensioen of de drie componenten hiervan. Maar wanneer rekening gehouden werd met de mate waarin werknemers actief hadden deelgenomen aan de interventie(s) die tijdens stap 4 geïmplementeerd zijn, was er sprake van een afname van mentaal pensioen en een toename van proactieve leeroriëntatie en bevlogenheid bij werknemers die actiever hadden deelgenomen. Daarnaast liet een kwalitatieve analyse het belang van de bottom-up participatieve aanpak zien. De deelnemers van de sessies waardeerden het dat zij hun mening konden geven, dat ze serieus werden genomen en dat ze invloed hadden op de inhoud van het programma. De specifieke kenmerken van het mentaal pensioen programma (een participatieve aanpak en een stapsgewijs, op maat gemaakt interventieproces) zijn mogelijk belangrijker voor het verklaren van de gevonden effecten dan de specifieke interventies die zijn geïmplementeerd in stap 4. Het bleek echter wel een grote uitdaging om de betrokkenheid van de werknemers vast te houden en de interventies te implementeren als er geen onderzoekers zijn om hen bij de les te houden. Toekomstig onderzoek zou de effectiviteit van het programma verder moeten onderzoeken met een verbeterd onderzoeksdesign. Er zou dan ook onderzocht moeten worden wat het effect is van het inzetten van facilitators die een team ondersteunen en coachen, met name in de implementatiefase. Deze 'facilitators' zouden onderzoekers kunnen zijn maar ook bijvoorbeeld HR medewerkers of trainers van de 'eigen' organisatie.

**Hoofdstuk 4** gaat in op de onderzoeksvraag *"Wat zijn de voorspellers van werkhervatting voor werknemers die langdurig verzuimen?"* In een prospectieve cohort studie met een follow-up na twee jaar onder 682 Nederlandse werknemers zijn de voorspellers van werkhervatting onderzocht. Deze werknemers verzuimden langdurig vanwege drie verschillende zelf gerapporteerde redenen: fysieke

(52,6%), mentale (23,3%) of co-morbide fysieke en mentale problemen (24,0%). Gemiddeld verzuimden de werknemers 19 weken op de nulmeting. Dit onderzoek laat zien dat gedeeltelijke werkhervatting op de nulmeting en een jongere leeftijd voorspellers waren van een snellere werkhervatting in alle drie de groepen. Werkgerelateerde self-efficacy (het geloof dat iemand heeft in het kunnen voldoen aan de eisen van het werk of het vervullen van een werkrol) voorspelde een snellere werkhervatting in twee van de groepen (verzuim door fysieke problemen en verzuim door co-morbide problemen). Andere voorspellers voor volledige werkhervatting verschilden tussen de groepen. De meeste voorspellers zijn òf meer stabiele concepten die moeilijk te veranderen zijn in een korte tijd òf factoren die praktisch gezien niet haalbaar zijn om in korte tijd te veranderen zoals opleidingsniveau, type contract en thuiswonende kinderen. Werknemers met een lagere opleiding hadden meer tijd nodig om het werk volledig te hervatten (voor de groep die verzuimde vanwege fysieke problemen). Werkhervatting duurde langer voor werknemers met vaste contracten (zowel in de groep die verzuimde vanwege psychische klachten als de groep die verzuimde vanwege co-morbide klachten). In de groep met zowel fysieke als mentale problemen als de reden voor ziekteverzuim was de duur tot volledige werkhervatting langer voor werknemers waarvan de kinderen thuis woonden of die in mindere mate een actieve coping stijl hadden. Alle voorspellers die in deze studie naar voren kwamen zijn demografische kenmerken en persoonlijke bronnen. Er is geen relatie gevonden tussen gezondheidskenmerken en werkkenmerken aan de ene kant en de duur tot volledige werkhervatting aan de andere kant.

De onderzoeksvraag *"Wat zijn de voorspellers van werkhervatting voor werknemers die langdurig verzuimen?"* was ook de focus van **hoofdstuk 5**. In dezelfde prospectieve cohort studie als die gebruikt is in hoofdstuk 4 is onderzocht wat de relaties zijn tussen werkkenmerken, depressieve symptomen en de duur tot volledige werkhervatting onder langdurig verzuimers (*N*=883). Werkhervatting duurde langer voor werknemers met depressieve symptomen op de nulmeting. Hoewel verschillende werkkenmerken (zoals autonomie, psychologische taakeisen, steun van de leidinggevenden en werkgerelateerde self-efficacy) gerelateerd waren aan depressieve symptomen, blijken er slechts twee werkkenmerken geassocieerd met de duur tot volledige werkhervatting. Werknemers met een hoge mate van werkgerelateerde self-efficacy (een persoonlijke bron) en een mindere mate van fysieke belasting (een taakeis) hadden minder lang nodig om volledig te hervatten. De twee studies die zijn beschreven in hoofdstuk 4 en 5 laten zien dat maatwerk mogelijk de effecten van interventies kan verbeteren, aangezien de voorspellers van volledige werkhervatting verschillen tussen de groepen die we onderzocht hebben in onze studies. Daarnaast hebben werkkenmerken mogelijk een grotere invloed op of werknemers überhaupt het werk hervatten dan op hoe snel mensen het werk volledig hervatten.

**Hoofdstuk 6** focust op de vraag *"Wat is het effect van een nieuw ontwikkelde groepsinterventie gericht op werkhervatting?"* Gebaseerd op de resultaten van de voorspellers van werkhervatting hebben we een kortdurende wetenschappelijk onderbouwde groepsinterventie ontwikkeld voor langdurig verzuimende werknemers. Deze interventie is gebaseerd op de werkende bestanddelen van ontwikkeling van vaardigheden en motivatieverbetering (vergroten van self-efficacy en omgaan met tegenslagen). Door te focussen op het verbeteren van self-efficacy in combinatie met het verwerven van werkhervattingsvaardigheden neemt het gevoel van bekwaamheid toe bij de deelnemers. Daarnaast is de training gefocust op de deelnemer in plaats van op de trainer. Dit betekent dat de deelnemers gezien worden als de informatiebron. De deelnemers zelf, als een groep, bedenken de oplossingen voor hun eigen problemen. Tevens wordt gebruik gemaakt van een positieve bejegening, het geven van specifieke positieve feedback en het negeren van ineffectief gedrag in de training. Werknemers konden meedoen aan de interventie als zij tenminste vier weken gedeeltelijk of volledig verzuimden en een baan hadden om naar terug te keren. Er waren geen specifieke criteria wat betreft het soort klachten. Werknemers met zowel fysieke als psychische klachten konden deelnemen aan de training. Een mini-pilot bij de Nationale Politie (*N*=6, gemiddeld 13,9 maanden verzuim) laat veel belovende resultaten zien. Deelnemers lieten een toename in self-efficacy, omgaan met tegenslag en proactiviteit zien. Bij de nameting (zes maanden na de interventie) waren vier van de zes deelnemers weer volledig aan het werk, de andere twee deelnemers hadden hun werk gedeeltelijk hervat. Tevens leek het groepselement van de training, naast kosteneffectiviteit, specifieke andere voordelen te hebben zoals universaliteit (herkenning van gedeelde ervaringen, gevoelens en problemen), sociale steun en cohesie (gevoel van vertrouwen, verbondenheid en saamhorigheid). Deze kenmerken maken groepsinterventies extra interessant voor langdurig verzuimende werknemers, omdat zij zich vaak geïsoleerd en alleen voelen. Dit neemt niet weg dat vanwege het kleine aantal deelnemers en het ontbreken van een controlegroep meer onderzoek nodig is om te zien of de effecten robuust zijn en ook in een andere context plaatsvinden.

**Hoofdstuk 7** bevat een algemene discussie van het proefschrift. Het geeft de belangrijkste bevindingen van dit proefschrift kort weer per onderzoeksvraag zoals deze in het eerste hoofdstuk staan genoemd. Daarnaast reflecteert dit hoofdstuk op de wetenschappelijke en praktische betekenis van de resultaten.
We concluderen dat self-efficacy een belangrijke rol speelt in het werkhervattingsproces. Werknemers met een hoge mate van werkgerelateerde self-efficacy hebben meer vertrouwen dat zij kunnen omgaan met uitdagingen op de werkplek en zij hervatten het werk sneller. Hoewel self-efficacy slechts één van de factoren is die werkhervatting beïnvloedt, is het wel een aantrekkelijk concept omdat het veranderbaar is. In tegenstelling tot een aantal andere determinanten van werkhervatting zijn er wetenschappelijke technieken waarmee self-efficacy be-

ïnvloed kan worden. Tevens laat ons onderzoek zien dat er weinig tot geen direct verband is tussen werkkenmerken en werkhervatting. Interventies die gericht zijn op het bevorderen van werkhervatting voor langdurig verzuimende werknemers kunnen zich daarom beter richten op het verhoging van self-efficacy dan op werkkenmerken.
Naast deze inhoudelijke aspecten zijn er verschillende andere kenmerken die de effectiviteit van interventies kunnen verbeteren. Ten eerste kan een participatieve aanpak effectief zijn en leiden tot gedeeld eigenaarschap, controle en verantwoordelijkheid, een gevoel van eerlijkheid en het kan het veranderproces soepeler laten verlopen. Ten tweede zorgt een stapsgewijs en op maat gemaakt interventieproces voor een kader dat organisaties kunnen gebruiken om de juiste interventies te kiezen. Ook vergroot het de kans dat de interventies die geïmplementeerd worden beter voldoen aan de specifieke behoeften van de doelgroep, dat gemaakte actieplannen effectiever zijn en dat de resultaten beter gebruikt worden. Ten derde heeft een groepssetting verschillende aantrekkelijke kenmerken waardoor de effecten van interventies mogelijk vergroot worden. Deze kenmerken zijn cohesie (gevoel van vertrouwen, verbondenheid en saamhorigheid) sociale steun en universaliteit (herkenning van gedeelde ervaringen, gevoelens en problemen), leren van gelijken, voorbeeldgedrag, inspiratie (geven van hoop) en interpersoonlijk leren. De twee onderzochte interventies in dit proefschrift (verminderen van mentaal pensioen en het bevorderen van werkhervatting) bevatten deze kenmerken. En hoewel de groepsinterventie voor werkhervatting slechts een mini-pilot was en het programma mentaal pensioen ook verschillende tekortkomingen had, laten onze resultaten zien dat deze interventies mogelijk effectief zijn.

Samenvattend heeft dit proefschrift een bijdrage geleverd aan inzichten in het nieuwe concept mentaal pensioen en het werkhervattingsproces en biedt het twee interventies aan die gebruikt kunnen worden om de mate van mentaal pensioen te verminderen in organisaties en werkhervatting te bevorderen onder langdurig verzuimers.

# About the author

## About the author

Jenny Huijs was born in August 3rd, 1982 in Venlo, The Netherlands. In 2000, she completed her high school (VWO) at Collegium Marianum in Venlo. Afterwards she studied Health Sciences at Maastricht University. During her Master program she studied a semester abroad at Linköping University in Sweden. In 2007, she received a Master's degree in two majors: Work & Health and Mental Health. She already started working at the Netherlands Organisation for Applied Scientific Research TNO in July 2006. Here, she has since been involved in research on sustainable employment, mental health, self-efficacy and return to work. She also gives workshops on these topics. This dissertation is the result of her PhD research on sick leave and return to work, which she started in 2010 as an external PhD candidate at the department Social and Organizational Psychology of the University of Utrecht. Her work has been published in and is currently under review at high-quality ISI rated journals.

# Dankwoord

## Dankwoord

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### Deelnemers aan het onderzoek

Toegepast onderzoek kan natuurlijk nooit plaatsvinden zonder de medewerking van deelnemers aan het onderzoek. Zonder hen zouden er geen resultaten zijn om op te schrijven. Ik wil alle **deelnemers** bij de verschillende organisaties dan ook hartelijk bedanken voor hun medewerking aan alle vragenlijsten en interviews. Zonder jullie was dit niet mogelijk geweest.

### Medewerkers en management van de Nationale Politie

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