MASTERY MATTERS:

The impact of self-efficacy and work-focused therapy on return to work among employees with common mental disorders

'Mastery matters':

De invloed van competentiebeleving en werkgerichte therapie op werkhervatting bij werknemers met veelvoorkomende psychische klachten

(met een samenvatting in het Nederlands)

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CHAPTER 1

GENERAL INTRODUCTION





INTRODUCTION

This dissertation aims to generate knowledge about the role of self-efficacy in the return to work (RTW) process for employees with common mental disorders (CMD) and interventions that promote RTW for these workers. In the past two decades, a couple of studies have examined the effectiveness of RTW interventions for workers with CMD. However, the evidence about effective interventions and their mechanism of change is still limited, especially with respect to mental health care (MHC) interventions (Arends et al., 2012; Nieuwenhuijsen et al., 2008; Joyce et al., 2016; Bouman, van Ede, de Jong, Nieuwenhuijsen, & van der Veen, 2015; Nigatu et al., 2016).

The current dissertation adds to the existing literature by evaluating the effectiveness of a workfocused MHC-intervention offered to employees on sick leave with CMD. This intervention consists of work-focused cognitive behavioural therapy (W-CBT) that systematically integrates work aspects into treatment delivered by clinical psychologists. In addition, special attention will be given to the role of work-focused self-efficacy, in order to understand the psychological mechanism that occurs during the RTW process. Previous intervention studies have paid little attention to such underlying factors. Insight in the role of self-efficacy may contribute to the refinement of the theoretical basis for effective RTW interventions. From a practical viewpoint, this dissertation will provide MHC-organizations with knowledge and tools to improve the impact of MHC on RTW.

This first chapter outlines main concepts such as common mental disorders (CMD), return to work (RTW), and RTW self-efficacy. In addition, the relevance of improving RTW interventions for employees with CMD is described, especially with respect to MHC interventions. Furthermore, the rationale for W-CBT is presented. Finally, we provide an overview of each subsequent chapter and briefly explain the research questions of this dissertation. An overview of the main research questions is presented in Textbox 1.

Main research questions of this dissertation:

- 1) How can 'Return To Work Self-Efficacy' (RTW-SE) be measured in a valid and reliable way?
- 2) How does RTW-SE change over time during the RTW process?
- 3) Are baseline RTW-SE and increases of RTW-SE predictive of faster RTW?
- 4) What are the effects of W-CBT on RTW and symptoms of CMD?
- 5) Can the effects of W-CBT on RTW be explained by changes in RTW-SE over time?
- 6) What subgroups benefit most from W-CBT? (differential effectiveness)
- 7) What factors should be addressed in interventions that aim to promote work outcomes for (major) depressed workers?

Textbox 1. Main research questions

IMPORTANCE OF FACILITATING RTW FOR WORKERS WITH CMD

CMD refer to mild to moderately severe mental disorders that meet the criteria of a disorder according to psychiatric classification systems, such as adjustment disorder, anxiety disorder and depressive disorder. CMD can be distinguished from severe mental disorders, such as schizophrenia, by the severity of impairment caused by the disorder and the expected duration of the disorder (Bouman et al., 2015). As opposed to severe mental disorders, CMD usually do not

affect cognition. CMD all share some characteristics such as feelings of emotional distress and functional impairment in social, occupational, or other important areas of live. The impairment associated with CMD is substantial. CMD such as depression, dysthymia and anxiety disorders can be found in the top 20 causes of years lived with disability (Global Burden of Disease Study 2013 Collaborators, 2015). For a more elaborated description of the different types of CMD see appendix 1.

CMD are called 'common' because of their high prevalence both in the general and in the working (age) population (Steel et al., 2014; Sanderson & Andrews, 2006; OECD, 2012; Alonso et al., 2004; Wang, Adair, & Patten, 2006). It is estimated that at any one moment CMD affect around 15-17 % of people from the working-age population in Western countries (OECD, 2012; Deverill, & King, 2009). In contrast, far less people (5%) are estimated to suffer from a severe mental disorder (OECD, 2012).

Although the majority of people with CMD work (around 60-70%, OECD, 2012), many of them struggle with work functioning and work participation. Concerning work functioning, these workers often experience difficulties with mental performance (e.g., concentrating), interpersonal tasks (e.g., handling emotions), or handling work pressure (e.g., keeping up work pace) (Gärtner, 2012; Adler et al., 2006; Plaisier, 2009; Kessler et al., 2006). With respect to work participation, CMD are currently a leading cause of long-term sickness absence and permanent work disability in most developed countries (Dewa, Loong, & Bonato, 2014; OECD, 2012; de Graaf, Tuithof, van Dorsselaer, & ten Have, 2011; Roelen, et al., 2009).

Sickness absence can be an effective temporal coping strategy in a crisis situation where demands placed on the worker are out of balance with the individual's capacity to cope. Both for sick leave due to work-related and non work-related causes, withdrawing from the workplace may create an opportunity for recuperation (van Rhenen, van Dijk, Schaufeli, & Blonk, 2008; Kristensen, 1991). However, long-term sick leave also has several detrimental effects for workers, as they lose a valuable source of social support, income, personal fulfillment, self-esteem and career perspectives (Plaisier, 2009; Seymour, & Grove, 2005; Marrone, & Golowka, 2000). In addition, long-term sick leave has negative consequences for other stakeholders such as employers, insurance companies, and taxpayers. Although CMD are usually less disabling than severe mental disorders, the higher prevalence of CMD imply great costs to society (Deverill, & King, 2009). Most financial costs of mental health problems are not associated with healthcare, but with sickness absence and productivity loss (de Graaf et al., 2011; OECD, 2012). For example, in the United States it has been estimated that 62% of the costs of depression are workplace-related costs (Greenberg et al., 2003). In the Netherlands, the yearly costs of sick leave for any mental disorder in the total working population have been estimated at 2,7 milliard Euros. A large part of these costs is related to CMD (de Graaf et al., 2011).

Because of the economic burden and the suffering of individual employees associated with longterm sick leave, it is important that RTW is facilitated among employees with CMD. An important question, both from a scientific and practical perspective, is therefore: What techniques should be used to effectively stimulate RTW for this target group? At the time we started the data collection for this dissertation (2005), little was known about effective RTW interventions for employees with CMD. Most research focused on RTW of people with physical health problems, or on the prevention and prediction of sick leave for workers with subclinical psychological problems (Sanderson, Nicholson, Graves, Tilse, & Oldenburg, 2008; van der Klink, Blonk, Schene, & van Dijk, 2001; Henderson et al., 2011). More recent studies continue to emphasize the need for more highquality studies on RTW and conclude that existing occupational or (mental) health care interventions reveal limited effects on RTW for workers with CMD (Arends et al., 2012; Nieuwenhuijsen et al., 2008; Joyce et al., 2016; Bhui, Dions, Stansfeld, & White, 2012). Therefore, this dissertation aims to contribute to a better insight into interventions that promote RTW for these workers.

THE CONCEPT OF RTW FOR EMPLOYEES WITH CMD

A successful outcome of the RTW process can be viewed differently by various stakeholders and between socio-legal contexts, resulting for example in more or less attention to the sustainability of RTW (Hees, Nieuwenhuijsen, Koeter, Bültmann, & Schene, 2012; Arends, 2013). In this dissertation, RTW is defined as an outcome where employees have resumed their work (with respect to work tasks and work hours) after a period of sick leave and perform at a level adequate to meet the regular demands of the work setting. Next to a complete resumption of this work role (full RTW) this dissertation also pays attention to partial RTW as an important intermediate outcome. Employees who partially return to work are (temporally) working fewer hours and/ or have reduced responsibilities than defined by their contract. Partial RTW implies that (temporal) work adjustments are made in order to match the employees' abilities and needs with the demands and characteristics from the workplace. Partial RTW preferably builds up towards full RTW, although for some workers with more chronic reduced work ability, partial RTW may even be a longer lasting solution (Josephson, Heijbel, Voss, Alfredsson, & Vingard, 2008). Employees with CMD have expressed to prefer a gradual return to work process (Andersen et al., 2012).

During the RTW process employees with CMD have to overcome a variety of obstacles. A metasynthesis of qualitative studies shows for example that employees with CMD find it difficult to decide about the right time to RTW. Sick listed employees struggle to balance their wish to 'answer the expectations from the work setting' and at the same time to protect their mental health (Andersen et al., 2012). Qualitative Dutch studies among workers with CMD report obstacles for RTW concerning personal factors (e.g., high sense of responsibility, perfectionism, symptoms of depression, inadequate coping skills), work factors (e.g., lack of possibilities for work adaptations, high mental workload, inadequate support from and communication with stakeholders at work) and health care factors (e.g., MHC underestimating the importance of work) (van Oostrom, van Mechelen, Terluin, de Vet, & Anema, 2009; de Vries, Hees, Koeter, Lagerveld, & Schene, 2014).

Such obstacles differ from the ones that are reported for workers with physical disabilities such as low back pain (van Oostrom et al., 2009), possibly because of the stigma associated with mental disorders and the reduced visibility of work limitations. People with mental health problems perceive stigma at the workplace as a serious barrier for RTW as opposed to workers with physical health problems (Seymour, & Grove, 2005; Alonso et al., 2009; Royal College of Psychiatrists, 2008). For instance, colleagues at work tend to view mental illness as personal failure, and people on sick leave with mental illness have an increased risk for dismissal compared to those with physical health problems (Royal College of Psychiatrists, 2008). Consequently, workers with CMD may have different needs for guidance during the RTW process compared to workers on sick leave due to physical health problems. But also within the group of workers with CMD, differences between individuals may require guidance tailored to the needs of the employee. These differences might for example be related to the disabling nature of the disorder (e.g., major depression is more disabling than adjustment disorder) (Snyder, Strain, & Wolf, 1990), or characteristics of the workplace (e.g., a depressed manager in a large company may experience other RTW obstacles than a depressed shop assistant in a small company) (Eakin, Clarke, & MacEachen, 2002; Oomens, Huijs, & Blonk, 2009a).

The variety of obstacles for RTW is illustrative for the multifactorial nature of RTW behaviour. which is emphasized in several theoretical models of RTW (Franche & Krause, 2002), including those that have been applied to workers with CMD (van Oostrom et al., 2007; Nieuwenhuijsen, 2004; Sanderson et al., 2008). Just as for any kind of behaviour, a successful outcome of RTW behaviour is influenced by a complex interaction between the environment and individual assets (Franche & Krause, 2002). In this way the mental health problem and sickness absence are not interpreted as a problem of the individual alone that should be solved with individual adaption strategies, but that (temporal) workplace changes are also necessary. Several studies have emphasized the importance of employers facilitating work adaptations, such as allowing partial RTW, to achieve successful RTW (Andersen et al., 2012; de Vries, Koeter, Nabitz, Hees, & Schene, 2012; Houtman, & Blatter, 2005; Hogelund, Holm, & McIntosh, 2010; OECD, 2012). Longitudinal quantitative studies corroborate the multifactorial nature of RTW and have identified predictors of successful RTW with respect to the disorder (e.g., symptom reduction), other personal factors (e.g., higher self-efficacy), or the workplace (e.g., supervisory support) (Cornelius, van der Klink, Groothoff, & Brouwer, 2011; Blank, Peters, Pickvance, Wilford, & MacDonald, 2008; Nieuwenhuijsen, Noordik, van Dijk, & van der Klink, 2013).

Insight into modifiable predictors is of upmost importance for the design of interventions that promote RTW (Michie, Johnston, Francis, Hardeman, & Eccles, 2008). Considering the multifactorial nature of RTW is seems plausible that effective interventions should intervene on both personal factors and workplace factors. This dissertation evaluates a newly designed intervention (W-CBT) that aims to intervene at multiple modifiable predictors (e.g., the disorder, the work setting and self-efficacy) via work-focused treatment of the individual worker (see chapter 3).

SELF-EFFICACY AS MODIFABLE PREDICTOR OF RTW

This dissertation pays special attention to self-efficacy as a modifiable predictor of RTW. Selfefficacy refers to the confidence people have in their ability to perform certain behaviour effectively (Bandura, 1986). When applied to the context of RTW, workers should feel confident about their abilities to return to the workplace and perform their job successfully. Self-efficacy is recognized as an important aspect in theoretical models for RTW (van Oostrom et al., 2007; Franche, & Krause, 2002). It has shown to predict RTW for employees with physical disabilities (Mondloch, Cole, & Frank, 2001; Reiso et al., 2003) and work resumption of unemployed individuals with mental health problems (Renegold, Sherman, & Fenzel, 1999). We expected that work-related self-efficacy might predict RTW for employees with CMD as well. People with CMD experience low efficacy beliefs by the nature of their disorder (Maddux & Meier, 1995). Based on Bandura's self-efficacy theory (Bandura, 1986) it can be expected that individuals with low workrelated self-efficacy will postpone their RTW and are less successful in their attempts to RTW.

In order to capture the experience of self-efficacy during the RTW process, we developed and validated a questionnaire that measures RTW self-efficacy (RTW-SE) specifically for employees who are absent from work due to CMD (chapter 2). Based on self-efficacy theory we expected that such a specific measure would be more valuable, compared to existing general self-efficacy measures, to monitor the RTW process, identify high-risk cases, or offer tailored treatment. As part of the validation this scale, the predictive value of RTW-SE for RTW was investigated on the short (chapter 2) and longer-term (chapter 5).

Self-efficacy can be enhanced by a variety of evidence-based behavior change techniques (Michie et al., 2008). Mastery experiences are viewed as the most powerful source to improve self-efficacy (Maddux, 1995). When the RTW process is adequately guided, resulting in mastery experiences and increased self-efficacy, self-efficacy theory would predict that employees will be more persistent and successful in their RTW process (Bandura, 1986; Bandura, & Adams, 1997). Enhancing work-related self-efficacy may therefore be a fruitful approach to use in interventions that aim to promote RTW. Hence, for the intervention that was developed for this trial (W-CBT), we tried to secure such mastery experiences in the RTW process.

This dissertation will provide insight in the role that work-related self-efficacy plays in the RTW process and in RTW interventions. In order to make optimal use of our results for the (re)design of RTW interventions across a variety of settings, we wanted to gain insight in the role of self-efficacy as a mechanism of change. More specifically, we explored the course of RTW-SE during the RTW process (chapter 4), tested whether RTW-SE growth (in addition to baseline self-efficacy levels) predicted successful RTW (chapter 5), and whether W-CBT, with its focus on mastery experiences, indeed promoted RTW-SE (chapter 4).

IMPORTANCE OF MHC THAT PROMOTES RTW

Psychologists are important stakeholders in the RTW process because a substantial proportion of workers with CMD receive MHC (Kessler et al., 2003; Stress Impact Consortium, 2006; ten Have, de Graaf, Vollebergh, & Beekman, 2004; Bijl, & Ravelli, 2000). In the Netherlands this is especially the case for employees with anxiety disorder, depression or an adjustment disorder with stagnating recovery (see appendix 2). Although existing MHC-interventions (pharmacotherapy, psychotherapy or a combination of both) contribute to the reduction of mental health complaints, these interventions have limited effects on RTW for employees with CMD (Arends et al., 2012; Nieuwenhuijsen et al., 2008; Nigatu et al., 2016; Blonk, Brenninkmeijer, Lagerveld, & Houtman, 2006; de Vente, Kamphuis, Emmelkamp, & Blonk, 2008; Lander, Firche, Tornemand, Andersen, & Kirkeskov, 2009; Nystuen, Hagen, & Herrin, 2006; Rebergen, 2009; Ejeby et al., 2014). For example, cognitive behavioral therapy offered by clinical psychologists to self-employed workers with CMD was no more effective with respect to RTW than minimal care by a general practitioner (Blonk et al., 2006). Regular MHC or assessment by a MHC-specialist might even prolong the time to RTW (Rebergen, 2009; Ejeby et al., 2014; Carlsson, Englund, Hallqvist, & Wallman, 2013). The multifactorial nature of RTW can provide an explanation why symptom reduction reached by MHC will not automatically lead to RTW. For example, among depressed employees only 10% of successful RTW could be explained by symptom reduction (van der Werff, Verboom, Penninx, & Nolen, 2010).

It is therefore important that MHC for workers on sick leave due to CMD is adapted in a way that it contributes not only to symptom reduction, but at the same time to a functional recovery in the clients' work role. This is important both to facilitate RTW, but also to secure sustainable recovery of symptoms. Long-term sick leave or unemployment may, for example, lead to a (further) deterioration of mental wellbeing (Price, van Ryn, & Vinokur, 2002; Cameron, Sadlo, Hart, & Walker, 2016; OECD, 2012). The limited effects of MHC on RTW may be a result of the prominent focus of MHC-specialists on symptom reduction while little attention is given to work-related problems (Keuzenkamp, Kok, & van Seters, 2002; Witkamp, van Oploo, & de Ruig, 2013; Kidd, Boyd, Bieling, Pike, & Kazarian-Keith, 2008; OECD, 2012; de Vries et al., 2014). In addition, the multiple stakeholders in the RTW process are often not cooperating well (Andersen et al., 2012; Vlasveld et al., 2008; Buijs, van Dijk, Evers, van der Klink, & Anema, 2007; van Oostrom et al.,

2009). This may also slow down the RTW process as workers have to deal with different views (and interests) from stakeholders.

Considering the multifactorial nature of RTW, more integral MHC which incorporates work issues may offer an important contribution to better RTW outcomes for employees with CMD. Such an integral approach may help to bridge the gap between care and work systems. Indeed, at the time we started this trial there was preliminary evidence that integral guidance for workers with CMD, that combined clinical and work-related strategies, were more effective with respect to RTW than interventions without such a dual focus (van der Klink, Blonk, Schene, & van Dijk, 2003; Blonk et al., 2006). In addition, such integrated care is known to support the employment of people with severe mental health problems as well (Drake, & Bond, 2011; Michon et al., 2014). The importance of work in psychological treatment is more and more embraced by Dutch MHC organizations (GGZ Nederland, 2013; Oomens, Huijs, & Blonk, 2009b). However, practical tools that facilitate psychologist to offer such integral care were not available. Therefore, we developed a workfocused MHC-intervention (W-CBT) that, alongside symptom reduction, aims to facilitate RTW.

RATIONALE FOR THE W-CBT INTERVENTION

As a starting point for the design of W-CBT, we decided to use cognitive behavioural therapy (CBT) and the intervention protocols of two existing effective CBT-based RTW interventions (van der Klink et al., 2003; Blonk et al., 2006). CBT is treatment of choice for the reduction of symptoms of CMD, and thus commonly offered to our target group (Butler, Chapman, Forman, & Beck, 2006). CBT appears well suited to address the multifactorial nature of RTW as it acknowledges the importance of intervening at different interrelated levels: the situation (e.g., a stressor), cognitions/beliefs (e.g., unrealistic thoughts) and the response (e.g., avoiding behaviour or feelings of depressed mood). CBT distinguishes itself from other therapies mainly with respect to the focus on modifying inadequate beliefs and transferring the skills learned in therapy to everyday life (Butler et al., 2006).

To achieve changes in (return to) work behaviour it seems plausible that therapeutic interventions should target barriers for RTW on the different levels that CBT distinguishes. We expected that CBT techniques applied to the work context might for example change a stressful work situation (e.g., the client might decide to ask for a transfer to another department), change the appraisal of work stressors (e.g., the client may feel less incompetent when the supervisor is not satisfied with his work), or change the dysfunctional response (e.g., the client sets personal boundaries at work, or feels less depressed). The levels that CBT distinguish can be fitted within the categories of RTW predictors reported in earlier studies: disorder factors (response), other personal factors (cognition or response) and work factors (situation). As such, W-CBT addresses the multifactorial nature of RTW as it aims to intervene on all of these possible mediating factors (see Figure 1).

CHAPTER 1 | GENERAL INTRODUCTION.



Figure 1. Categories of RTW predictors that W-CBT aims to influence

As the modification of dysfunctional thinking is a defining feature of CBT, CBT seems potentially well suited to address unrealistic low self-efficacy cognitions that hinder successful RTW. Bandura has proposed several strategies that can be used to enhance self-efficacy. Because enhancing mastery experience appears the most important strategy to increase self-efficacy, W-CBT mainly focused on securing such success experiences. Following the CBT strategy of 'graded exposure' we tried to facilitate these success experiences by an early and **gradual RTW plan** including work adjustments. By temporally changing the requirements and characteristics of the workplace, sick listed employees may become convinced that, even with their current psychological state, they are able to successfully fulfill these adjusted work demands. The first step in a gradual RTW plan would need to fit the existing self-efficacy of the employee, in order to secure a successful step in the RTW process. The two evidence-based RTW interventions that were used as a starting point for W-CBT used similar graded RTW plans (Klink et al., 2003; Blonk et al., 2006).

W-CBT influenced the work setting indirectly via the sick listed workers who made arrangements with their supervisor based on the clinical advice from the therapist. This clinical support could concern advice for workplace adjustments, or support to cope more effectively with negative work characteristics that are hard to change. In order to facilitate optimal advice of the therapist on work adjustments we included a **comprehensive work anamnesis** in the W-CBT protocol. This anamnesis was partly based on several work factors that are known to have an impact on mental health such as social support, autonomy, or job security (Netterstrom et al. 2008; Ndjaboue, Brisson, & Vezina, 2012; Plaisier, 2009; Plaisier et al., 2007; Theorell et al., 2015). Textbox 2 gives an overview of the main work-focused elements of the W-CBT intervention. For a more elaborate description of the work-related strategies of W-CBT or strategies that may specifically promote work-related self-efficacy see chapter 3 and 4, respectively.

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Main elements of W-CBT:

- Work-focused psycho-education: Stressing the importance of working for sustainable recovery of symptoms and motivating workers for early/gradual RTW.
- Work anamnesis: A comprehensive employment history, detailed inventory of work tasks, and symptom inventory with respect to (return to) work situations: A way to discover patterns in work-related choices and work functioning that may provide lessons for future work life. A way to clarify resources and (perceived) barriers at work, which can be used to draw the RTW plan and motivate clients for RTW.
- An activating and gradual RTW plan: With tailored goals for the employee and designed to secure both success and learning experiences in order to enhance self-efficacy.
- *Evaluation of RTW progress:* While also encouraging clients to take the next step and prevent relapses
- Cognitive restructuring with respect to (return to) work
- Framing other regular CBT strategies in the context of work (e.g., relaxation techniques while imagining work-related stressors).

Textbox 2. Main elements of the newly developed W-CBT intervention protocol

A central question that will be answered in this dissertation is whether W-CBT, that integrates work aspects early into regular CBT, will indeed promote RTW for employees with CMD. We evaluated the effectiveness of W-CBT not only on RTW but also on mental health outcomes (chapter 3). In addition, we investigated whether the effectiveness of W-CBT on RTW and symptom recovery may be different for clients that at start of treatment differed with respect to their symptom severity and RTW-SE (differential effectiveness; chapter 6). By examining these questions, we aim to address the legitimate concern from the therapists involved in our trial that W-CBT (including early RTW) may have negative side effects on symptom development, especially among clients with more severe symptoms. After all, a successful implementation of W-CBT will depend on the practitioners' belief that W-CBT is adequate for their specific clients.

From an ethical point of view, we excluded patients with a major depression in our trial, which is considered a more a more disabling type of CMD. At the time we developed the W-CBT intervention, no studies had researched the effectiveness of such work-focused CBT interventions for employees with a major depression. However, as we acknowledge the importance of effective RTW interventions for workers with (major) depression, we researched what factors influence work outcomes for these workers (chapter 7). Insight in the modifiable factors for depressed workers may be a starting point for the (re)design of interventions that promote sustainable work participation for this specific group.

OUTLINE OF THIS DISSERTATION

Second chapter: Validation of the 'RTW Work Self-Efficacy' (RTW-SE) questionnaire. As the concept of self-efficacy plays an important role in this dissertation, but no self-efficacy measures were available concerning the context of RTW for employees with CMD we developed a questionnaire. The second chapter describes the development and validation of this questionnaire that measures 'Return To Work Self-Efficacy' (RTW-SE).

Third chapter: The *effects of W-CBT on RTW and symptoms of CMD*. In order to enhance the effectiveness of mental health care on RTW we developed an integral intervention (work-focused cognitive behavioural therapy; W-CBT) that addresses both psychological symptoms and (return to) work. This chapter describes the effectiveness of W-CBT on RTW and symptoms of CMD. In addition, this chapter gives a detailed description of the content of W-CBT.

Fourth chapter: *Self-efficacy growth as a mechanism of change and exploring patterns of self-efficacy change.* To make optimal use of our results for the (re)design of RTW interventions across settings we explored self-efficacy as a mechanism of change. Therefore, we first describe how RTW-SE changes over time during the RTW process. More specifically, we describe self-efficacy change patterns before the occurrence of full RTW in both intervention groups. The comparisons between intervention groups may clarify whether the effect of W-CBT on RTW can be explained by differences in self-efficacy growth over time.

Fifth chapter: *Predictive value of baseline self-efficacy and self-efficacy growth for RTW.* This chapter focuses on the predictive value of self-efficacy on RTW. As no studies have tested the impact of self-efficacy growth on RTW it remains unclear whether improving RTW-SE is an effective way to promote RTW for workers with CMD. This chapter briefly describes the predictive value of self-efficacy growth on RTW, both for people with either high or low baseline self-efficacy. **Sixth chapter:** *Differential effectiveness of W-CBT.* In order to facilitate future implementation of W-CBT it is important to know who benefits from W-CBT and to what extent. Therefore, this chapter focuses on the differential effectiveness of W-CBT. We describe whether the effectiveness of W-CBT on RTW and symptom recovery may be different for clients that at start of treatment differed with respect to their symptom severity and RTW-SE.

Seventh chapter: Factors that should be addressed in interventions that aim to promote work outcomes in (major) depressed workers. This chapter presents a systematic review of factors that are associated with work functioning or work participation of workers with (major) depression. These results are important to design RTW interventions specifically for depressed workers and explore whether integral interventions, such as W-CBT, may be a fruitful approach for this group as well.

Eighth chapter: *General discussion*. The final chapter presents a general discussion that first describes our main findings for each research question. Secondly, this chapter reflects upon the meaning of these main findings based on 2 themes: 1) the role of self-efficacy in the RTW process, and 2) the effectiveness of W-CBT.

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CHAPTER 2

DEVELOPMENT AND VALIDATION OF A RETURN TO WORK SELF-EFFICACY QUESTIONNAIRE





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ABSTRACT

Because of the costs to both the organisation and the individual, it is important that employees who are sick-listed with mental health problems are facilitated in their return to work. In order to provide adequate interventions, it is necessary to obtain a better understanding of the return to work process of people with mental health problems. Work-related self-efficacy might play a key role within this process. This paper describes the development and validation of the Return To Work Self-Efficacy' scale (RTW-SE) for employees with mental health problems. Three Dutch samples of sick-listed employees were used to validate the 11-item instrument (N = 2214). Based on the factor structure and reliability results, RTW-SE was conceptualised as a unitary construct. The associations with general self-efficacy, locus of control, coping, physical workload and mental health problems support the construct validity of this scale. Most importantly, RTW-SE proved to be a robust predictor of actual return to work within 3 months. The encouraging preliminary psychometric properties of the scale make it a potentially valuable tool in research and in clinical practice and occupational health care settings, both before and after employees have returned to work.

INTRODUCTION

Mental health problems are associated with reduced participation in work, such as sick leave or long-lasting work disability (Hardy, Woods, & Wall, 2003; Wang, & Adair, 2006). Because of the societal costs and individual suffering associated with reduced work participation, it is important that employees with mental health problems are facilitated in their return to work (RTW) (Eaton, Martins, Nestadt, Bienvenu, Clarke, & Alexandre, 2008; Goetzel, Long, Ozminkowski, Hawkins, Wang, & Lynch, 2004). Therefore, a better understanding of the factors that facilitate or hamper the return to work process is needed. As most research and theorizing with respect to return to work has focused on people with physical disabilities, special attention should be paid to the return to work process of employees with mental health disorders (Sanderson, Nicholson, Graves, Tilse, & Oldenburg, 2008; Briand, Duran, St-Arnaud, & Corbière, 2007).

Self-efficacy (SE) is a construct that would appear useful in understanding and facilitating return to work behaviour. In short, SE is the belief that an individual has in his/her capacity to perform a specific behaviour successfully (Bandura, 1977). According to Bandura, SE is highly predictive of the initiation and persistent execution of behaviour. High self-efficacious individuals set themselves more challenging goals, invest more to pursue these goals, persist longer and are better in dealing with setbacks than persons low in SE. Moreover, individuals will avoid activities for which they experience low SE. When applied to RTW, people with low SE believe that they will fail to fulfil their work demands or work role. These efficacy cognitions are expected to be prominently present among those with mental health problems, as mental disorders often erode a positive self-concept by the very nature of the disorder (Corrigan, Watson, & Barr, 2006). Based on self-efficacy theory it can be expected that these employees will postpone their return to work and be less successful in their attempts to return to work than employees with higher levels of SE. The concept of SE has proved its predictive value for a range of work-related behaviours, such as RTW for employees with physical disabilities (Mondloch, Cole, & Frank, 2001; Reiso, Nygård, Jørgensen, Holanger, Soldal, & Bruusgaard, 2003) and work resumption of unemployed individuals with mental health problems (Renegold, Sherman, & Fenzel, 1999). In addition, some empirical findings suggest the importance of SE in the return to work process for employees on sick leave with mental health problems. Nieuwenhuijsen and colleagues showed for example that patient expectations of recovery duration are a robust predictor of the actual time taken to return to work for employees with common mental health problems (Nieuwenhuijsen, Verbeek, de Boer, Blonk, & van Dijk, 2006). These expectations about the duration of the return to work process might be indicative for underlying efficacy cognitions.

To our knowledge, however, no measures are available that capture self-efficacy expectations regarding return to work and return-to-work self-efficacy (RTW-SE) for sick-listed employees with mental health problems. This paper describes the development and preliminary validation of a new RTW-SE questionnaire. Concerning the development it is important that this measure covers the domain of RTW cognitions that are relevant for people with mental health problems. An instrument that addresses these disability-specific considerations may be of great use in research as well as for screening or the evaluation of the effects of treatment within a clinical setting.

Development of the questionnaire

In the development of our questionnaire, we aimed to incorporate disability-specific components of RTW for employees with common mental disorders. For that purpose, several stakeholders were interviewed (e.g. clinical psychologists, work and organizational psychologists, occupational physicians and workers with mental health problems). The stakeholders were informed that the guestionnaire had to be useful for evaluative purposes and to provide useful information to care providers in order to offer tailored interventions. RTW was defined as 'performing at a level adequate to meet the regular demands of a work setting'. Multiple aspects of the RTW process were discussed with the stakeholders, such as factors influencing the decision to return to work and work functioning problems, specifically for employees with common mental health problems. Several domains of work functioning problems could be distinguished from these interviews; (1) difficulty in concentrating, (2) dealing with work pressure (e.g. setting one's personal boundaries), and (3) problems with emotion or (4) energy regulation. We combined these qualitative outcomes with the scientific literature on mental health in relation to work outcomes. In addition we reviewed existing (general or specific) SE scales (for example: Schwarzer, & Jerusalem, 1995; Barlow, Wright, & Cullen, 2002). This resulted in an initial pool of 33 items. We chose items describing general job requirements in order to keep the questionnaire applicable across occupations. The group of stakeholders reviewed the scale before it was finalized into its 11-item version. Criteria that were used to shorten the scale were: usefulness to care providers (offering interventions and monitoring results), comprehensibility, lack of ambiguity, no overlap with other items, covering the aspects of SE as proposed by Bandura, and preserving at least one item per work functioning domain mentioned in the stakeholder interviews. In order to examine the construct validity of the new RTW-SE scale its relationship with several other relevant constructs will be explored in this paper. These are outlined in the following sections.

General self-efficacy & *locus of control.* General SE and locus of control are both part of the so called 'core self-evaluations'. Because these two core self-evaluations have proved to be related to various work outcomes (e.g., job performance), they seem relevant constructs to consider when evaluating a measure for RTW self-efficacy (Judge, Erez, Bono, & Thoresen, 2003). General Self-Efficacy (GSE) refers to a broad and stable sense about how well one can perform across a variety of situations. GSE can be viewed as an underlying trait-like construct that overlaps to a certain extent with specific SE measures that are more state dependent. Luszczynska and colleagues found in their meta-analysis for example that GSE beliefs were moderately (correlations of about .20 to .30) but consistently positively related to behaviour-specific self-efficacy beliefs (Luszczynska, Scholz, & Schwarzer, 2005). Barlow et al. (2002) found even higher correlations

between GSE and a job seeking SE scale (r=.72). Therefore we expect that: Hypothesis 1. Higher RTW self-efficacy will be moderately to strongly associated with higher levels of GSE.

Internal locus of control refers to the belief that events in one's life are caused by one's own behaviour and that one is in control of what happens in one's life. People with an external locus, on the contrary, believe that outcomes are unrelated to their own actions and are influenced by external forces beyond their control (such as fate or others). An internal locus of control has been related to positive vocational outcomes, such as reemployment (Ginexie, Howe, & Caplan, 2000). Bandura suggests that achievements will only enhance self-efficacy if individuals attribute these to personal ability. Thus, an internal locus of control seems to be a prerequisite for higher levels of self-efficacy. The interrelatedness between SE and locus of control is for example demonstrated among unemployed participants with clinically diagnosed mental health disorders (Strauser, Ketz, & Keim, 2002). Strauser and colleagues found that higher internal locus of control (as opposed to an external locus) was associated with higher job readiness SE (r = .37). Thus we expect that: *Hypothesis 2: Internal locus of control will be clearly distinct from but still moderately related to higher RTW-SE*).

Mental health status. Mental health problems such as stress, anxiety or depression are associated with lower SE (Bandura, 1997; Schwarzer, 1992). The relationship between SE and mental health has been supported in occupational settings (Waghorn, Chant & King, 2005; Jex & Gudanowski, 1992; Mueller, Hartmann, Mueller & Eich, 2003). Therefore, we expect that: *Hypothesis 3. RTW-SE will be strongly negatively related to mental health problems.*

As low self-efficacy might even be an indication of having a mental disorder (Tonge, King, Klimkeit, Melvin, Heyne, & Gordon, 2005), it is particularly important that our empirical findings support the notion that RTW-SE for people with mental health problems is, despite a relatively high correlation, not equivalent to their mental health problems. Because the instrument specifically captures RTW problems for people with psychological problems, we additionally expect that: *Hypothesis 4: People with a mental health disorder will score lower on the SE-RTW scale than those with physical health problems.*

Coping style. Coping strategies are defined as ongoing cognitive and behavioural efforts to manage specific external and/or internal demands appraised as taxing or exceeding the resources of a person (Lazarus, 1999). Several coping styles have been identified. Active coping refers to active strategies people adopt to solve a stressful situation and is generally considered be an 'effective coping style', whereas avoidant coping is generally viewed as less effective (Penley, Tomaka, & Wiebe, 2002). People who adopt an avoidant coping strategy aim to reduce the negative effects (and emotions) of a stressful situation by avoiding that situation. Individuals with high levels of self- efficacy are found to use different and more effective coping strategies as they recognize that they are able to overcome the obstacles, and will focus on opportunities (Lazarus, & Folkman, 1984). For example when sick-listed workers hold the belief that they are able to deal with their work demands (high RTW-SE), they are more likely to show active coping strategies than avoidant coping styles. Thus we expect that: *Hypothesis 5a: RTW-SE will be negatively correlated with active coping.*

Physical workload. Physical workload refers to the physical demands of work activity such as general physical exertion, but also handling physical loads and working in physically uncomfortable body positions. Demands at the physical level are expected to have little effect on the SE concerning tasks that are most likely to be disrupted by mental health problems, such as meeting cognitive or emotional job demands. Even within a population of absentees with muskoskeletal

disorders Lötters et al. failed to find a correlation between RTW-self-efficacy and perceived physical workload (Lötters, Franche, Hogg Johnson, Burdorf, & Pole, 2006). As our questionnaire was designed to measure work functioning expectations associated with the symptoms of mental health disorders, we expect that: *Hypothesis 6: RTW-SE will be unrelated to perceived physical workload*).

Predictive validity for RTW. Studying the associations with the aforementioned constructs is an essential step within the validation process. In addition, a remaining key question is whether RTW-SE is predictive of actual RTW. Because gradual work resumption seems to be an important element in successful RTW for employees with mental health problems (Van der Klink, 2002), attention will be paid to both full RTW (working full contract hours) and partial RTW (temporarily working fewer hours than defined by contract). Based on theoretical and empirical findings, as described before, we expect that: *Hypothesis 7: Baseline RTW-SE will be associated with partial return to work at baseline and predictive of either full or partial return to work within a period of three months.*

METHOD

Participants and procedure

Data were obtained concerning 2214 sick-listed employees from three Dutch samples, of whom about half had resumed their work tasks partially at baseline measurement, as opposed to those who were fully sick-listed at baseline. One sample consisted of employees who were selected because of their psychological complaints. The other two were mixed samples (employees selected because of health problems, either mental or physical). Employees from all three samples could experience co-morbid physical or mental health complaints. The demographics and absence-related information of the participants are presented in Table 1. Additional information is provided below.

Sample 1. The first sample consisted of a representative sample of 1934 Dutch employees who were sick-listed for more than 13 weeks; they were recruited via the national Dutch Social Security Agency in 2007. The survey was sent to a large sample (N = 10,118) of the Agency, and only those clients meeting the inclusion criteria (partial of full sick leave) were asked to respond. Participants were on average 46 years and female in 54% of the cases. The majority of this sample (67%) experienced serious psychological problems-based cutoff scores on the Masclach Burnout Inventory (> 2.20 indicating clinical burnout; Schaufeli, & van Dierendonck, 2001) or the shortened Center for Epidemiologic Studies Depression Scale (\geq 10 indicating depression; Andresen, Malmgren, Carter, & Patrick, 1994). Of the participants who indicated physical problems as the main reason for their absence, 60% reported limb or back problems, 14% physical disability due to an accident, 10% heart disease and 8% cancer. Participants worked on average 32 hours per week as defined by their contract.

Sample 2. The second sample consisted of three waves of a longitudinal study among 189 employees (response rate of 36%) who were on sick leave due to common mental health disorders (as diagnosed according to DSM-IV criteria by a clinical psychologist) and were going to receive psychotherapy shortly after baseline measurement. The participants were recruited via their psychotherapists in 2007. Data were gathered before the onset of therapy, and three months (N=180) and six months (N=175) after baseline. Participants were on average 41 years old, and

57% of them were female. Of the participants who indicated physical problems as the main reason for their absence, 87% reported fatigue, 77% problems of the limbs or back and 21% headaches. It was a mixed sample regarding type of job and company size and participants worked on average 33 hours per week as defined by their contract.

Sample 3. The third sample consisted of 91 participants (response rate of 21%) who were recruited via an Occupational Health Organization in 2005. All participants were on sick leave and had contact with their occupational physician during the inclusion period (three weeks). Of the total sample, 65 participants also filled in a two-week follow-up questionnaire and 73 (80%) gave permission to extract RTW levels from the files of the Occupational Health Organization after three months. Participants were on average 44 years old, and 47% were female. Almost half of the sample (48%) had a score of 6 or higher on the shortened depression subscale (Depression Anxiety Stress Scales: DASS) and were considered to be experiencing serious psychological problems (Nieuwenhuijsen, de Boer, Verbeek, Blonk & van Dijk, 2003). Regular working hours were on average 33 hours per week within this sample.

Instruments

Return to work and sick leave. Both the onset of sick leave and RTW were reported by the participants in the questionnaire and were compared to data from the registration systems of the Social Security Agency (sample 1), the psychologist (sample 2) or the Occupational Health Organization (sample 3). An exception was that the RTW follow-up data in the third sample were collected from the files of the Occupational Health Organization only. The onset of sick leave was defined as the start date of the most recent absence period. RTW was defined as the current work status compared to regular working hours as defined by contract: that is, no RTW, partial RTW (temporarily working fewer than full contract hours) or full RTW.

Table 1. Participant characteristics across the 3 samples.

	Sample 1 <i>N</i> =1934	Sample 2 <i>N</i> =189	Sample 3 N=91	Total <i>N</i> =2214
Mean age (sd)	46.0 (9.9)	40.6 (9.5)	44.1 (10.2)	45.4 (10.1)
Gender (% female)	54.2	56.8	47.3	54.1
Higher education (% college or university)	26.3	44.7	NA	27.9
Weeks on sick leave at baseline (sd)	19.3 (3.2)	9.4 (11.2)	20.4 (21.6)	18.4 (6.9)
Fully sick listed at baseline (%)	45	61	46	46
Mental health disorder at baseline* (%)	67	100	48	69
Self reported reason for absence (%):				
Physical health problems	39.7	16.8	36.3	39.1
Mental health problems	16.8	33.7	27.5	17.2
Mental and physical health problems	21.9	45.3	NA#	22.9
Other/missing	21.6	4.2	36.3	20.8

* Based on Center for Epidemiologic Studies Depression/ Maschlach Burnout Inventory cut-off scores (sample 1), clinical mental health diagnosis (sample 2), cut-off scores of the depression subscale of the Depression, Anxiety & Stress scale (sample 3).

In this sample the participants were required to choose a main reason of absence (co-morbidity was not an option).

Return to work- self-efficacy (RTW-SE). RTW-SE was measured with an 11-item scale as described earlier. Participants were asked to respond to statements about their jobs, imagining that they would start working their full contract hours again tomorrow (in their present emotional state/state of mind). An example item is: "If I resumed my work fully tomorrow I expect that: I will be able to perform my tasks at work". Response categories vary from totally disagree' to 'totally agree' on a six-point scale. A mean score over the 11 items was used to compute the RTW-SE scale score.

Depression. The self-report 10-item Centre for Epidemiologic Studies Depression scale (shortened CES-D, Andresen, Malmgren, Carte & Patric, 1994) was used for the measurement of depression. The original 20 item CES-D scale (Radloff, 1977) is designed to measure depressive symptoms in the general population. The CES-D requires the respondent to describe how frequently he or she has felt or experienced each of the statements during the previous week. Responses include: 0 "Rarely or none of the time (less than 1 day);" 1 "Some or a little of the time (1–2 days);" 2 "Occasionally or a moderate amount of the time (3–4 days);" and 3 "Most or all of the time (5–7 days)." An example item is: "I was bothered by things that usually don't bother me." The CES-D total score adds the scores over all items (range for the shortened scale is 0-30). Sum scores of 10 or higher indicate clinically significant levels of depressive symptoms. Internal consistency (Cronbach's alpha) in our study was .85.

General self-efficacy (GSE). General self-efficacy refers to the belief in one's competence to cope with a broad range of stressful or challenging demands. It was measured with a 10- item scale by Schwarzer and Jerusalem (1995). A typical item is, "*Thanks to my resourcefulness, I can handle unforeseen situations.*" Possible responses are not at all true (1), hardly true (2), moderately true (3) and exactly true (4). The summed scale score had excellent internal consistency (Cronbach's alpha=.91).

Locus of control. Internal locus of control was measured with five items from Rotters locus of control scale (Rotter, 1966). This self-report measure is designed to measure the respondents' perceived ability to influence events in their own life. These five items were selected in accordance with the recommendations by Den Hertog (1992) who suggested a separate shortened internal locus subscale. Higher scores on this scale indicate a more internal orientation. Participants are asked to indicate how strongly they agree with statements on a six-point scale (coded 1 to 6). An example item is: *'Things that happen are determined by my own actions'*. A mean scale core was computed with an internal consistency of .59. Adaptations to the scale did not substantially improve the internal consistency of this scale.

Coping. Coping was measured with the shortened version of the Utrecht Coping List (UCL; Scheurs, van de Willige Brosschot, Tellegen & Graus, 1993). This questionnaire was designed to measure the coping strategies people use in stressful situations and is regarded as a personal disposition (trait). For the purpose of this study the subscales of 'active coping' (3 items) and 'avoidant coping' (2 items) were used. An example of active coping is 'seeking multiple ways to solve a problem'. An example of avoidant coping is: 'avoiding difficult situations'. All answers are on a four-point scale ranging from 'seldom or never' (coded 0) to 'very frequently' (coded 3) and the scale score consists of a mean. Reliability of these scales in the current study were .75 for active and .70 for avoidant coping, respectively.

Physical workload. To measure physical workload, means scores on four items of the Job Content Questionnaire (JCQ, Karasek Brisson, Kawakami, Houtman, Bongers & Amick, 1998) were used. Response categories were presented on a four level Likert-type scale, as follows: 'totally disagree' (coded 0), 'disagree' (1), 'agree' (2) and 'totally agree' (3). The internal consistency in this study was .89.

Statistical analyses

Multiple types of analysis were used within this study, all within the SPSS-14 package. The predictive validity was studied using logistic regression with the RTW outcomes (either partial RTW or full RTW) coded 1. Sensitivity to change was analyzed with GLM repeated measures. Both GLM and logistic regression results were corrected for relevant covariates as described in the Results section.

Because two of the three samples also contained employees sick-listed with physical problems, we repeated our analysis on a sub-sample of employees with substantial psychological problems such as a clinical burnout or depression. All participants from the second sample were included in this subgroup. Individuals with above threshold scores on the MBI, CES-D or DASS from samples 1 and 3 were also included in this subgroup. The percentage of participants from each group that was included in this subgroup is presented in Table 1 as those with a" mental health disorder at baseline".

RESULTS

Descriptive statistics

Table 1 shows the characteristics of the participants across the 3 samples used. As shown in Table 2, the distribution of baseline RTW-self efficacy was different across these 3 samples. The means ranged from 3.27 to 4.24 (F(2,2211) = 59.9, p < .01) and standard deviations ranged from 1.13 to 1.31. A screening of the baseline data in the total sample indicated that the RTW self-efficacy scale was normally distributed. All individual items also met normality criteria, although two items slightly exceeded the kurtosis threshold of 1 (items 6 and 9, see Table 3).

Reliability

The internal consistency of the RTW-SE scale was examined on the baseline data (all three samples) and the follow-up data (from sample 2 and 3). The distributional properties and reliability estimates are presented in Table 2. The internal consistency was excellent over time and across samples (> .80).

 Table 2. Means (standard deviations) and Cronbach's alphas of the return to work self-efficacy

 scale at baseline and follow-up.

	Sample 1		Sample 2		Sample 3		Total	
	M (SD)	Alpha	M (SD)	Alpha	M (SD)	Alpha	Ν	Alpha
Baseline	4.24 (1.14)	.92	3.27 (1.31)	.95	4.08 (1.13)	.92	2214	.93
2 weeks	-		-		4.32 (.86)	.90	65	.90
3 months	-		4.02 (1.25)	.96	-		178	.96
6 months	-		4.37 (1.05)	.94	-		173	.94

Because we also designed the RTW-SE scale for evaluative purposes, the stability of the instrument over time was considered a key element. The test re-test reliability of the scale was studied within-sample 3 (N = 65) using the baseline measurement and at two week follow-up. Pearson correlation was .73 (p < .01), indicating adequate test re-test reliability (Evers, 2001). It must be noted that when the test-rests analysis was repeated within the selection with a mental health disorder at baseline (see Table 1, N = 37), the correlation drops to .47 (p < .01), while the internal consistency of the scale remains excellent at both measurements in this subgroup.

Validity

In line with our expectations (hypothesis 4) ANOVA analysis showed that participants who were sick-listed with a mental health disorder at baseline scored lower (mean = 3.81) on the RTW-SE scale than people without substantial mental health problems (mean = 4.89) (*F* (1, 2212) = 467, *p* < .01). These results support the 'known groups validity'.

Sample 2 allowed us to study the sensitivity to change of the RTW-SE scale over a six month period (see Table 2 for the mean SE-scores). Sensitivity to change refers to the ability of a measure to detect minimal but clinically important changes in a construct. As all participants were receiving psychotherapy during the study, the number of therapeutic sessions at the time of measurement was taken into account as a covariate within the GLM repeated measures analysis. Results clearly indicated that self-efficacy increased within three months (F(1,174) = 32.3, p < .01) and within six months (F(1,170) = 26.4, p < .01) after the onset of therapy (baseline measurement).

To determine the underlying factor structure of the RTW-self efficacy scale an exploratory principal components analysis was conducted. Based on Kaiser's rule of Eigenvalues (Kaiser, 1960) a one -component solution was proposed. This one-factor solution (with a 6.5 Eigenvalue), explained 59.3% of the total variance and was also supported by inspection of the screeplot. Factor loadings (shown in Table 3) on this scale were all high and varied between .60 and .88. Based on the results from the factor and reliability analysis, we concluded that RTW-self efficacy was best conceptualized as a uni-dimensional construct.

Table 3. Factor loadings from exploratory principal component analysis

	Items of the Return to Work self-efficacy scale (RTW-SE)	Factor loading
1	I will be able to cope with setbacks	.83
2	I won't be able to complete my work tasks due to my emotional state*	.70
3	I will be able to set my personal boundaries at work	.75
4	I will be able to perform my tasks at work	.83
5	I will be able to deal with emotionally demanding situations	.85
6	I will have no energy left to do anything else*	.60
7	I will be able to concentrate on my work	.86
8	I will be able to cope with work pressure	.88
9	I won't be able to handle potential problems at work*	.66
10	I can motivate myself to perform my job	.78
11	I can deal with the physical demands of my work	.68

* reversed items.

Correlates of RTW-SE and several validating measures from samples 1 and 3 were studied for evidence of convergent and discriminant validity. Correlations presented in Table 4 support the hypothesized relationships. Higher general self-efficacy (hypothesis 1), a more internal locus of control (hypothesis 2) and a more active coping style (hypothesis 5b) were associated with higher levels of RTW- self-efficacy. Higher depression levels (hypothesis 3) and an avoidant coping style (hypothesis 5a) were related to lower levels of RTW-SE. Physical workload showed no relationship with RTW-SE (hypothesis 6). These patterns did not differ in significance or direction when applied to the subgroup of people with mental health problems, except that GSE and locus of control were no longer significant due to power problems (*N* = 43 and 44).

Table 4. Pearson correlations between the return to work self-efficacy scale and validating scales.

	Correlation with RTW self-efficacy scale
1. General self-efficacy	.48** (N=88)
2. Locus of control	.35** (N=91)
3. Physical workload	.03 (N=1931)
4. Depression	51** (N=1895)
5. Active coping	.18** (N=1914)
6. Avoidant coping	27**(<i>N</i> =1902)

**p < .01 (2-tailed)

The predictive value

The predictive value of the scale was explored by analysing the relationship between RTW-SE and two outcome measures; partial and full RTW. First the chance to be (partially) at work in relation to RTW-SE was analyzed cross-sectionally. Including all three samples (N=2183), logistic regression showed that higher baseline RTW-SE was associated with higher chances of partial work resumption (Exp(B)=1.30, p <.01).

In addition to the cross-sectional associations, longitudinal relations were studied within the second and third samples (N = 245). Of these participants, 76% had partially and 40% had fully returned to work within three months. Logistic regression analysis showed that higher baseline RTW-SE was a strong predictor of partial (Exp(B)=1.45, p<.01) and full RTW (Exp(B)=1.37, p<.01) after three months.

To study the relative value of self-efficacy compared to other possible predictors a backward stepwise procedure was used. The following variables were included in the initial analysis: substantial psychological problems (yes or no), age, gender (female), duration of sickness absence and, for the prediction of full return to work, also partial return to work at baseline (yes or no) was included. These variables have been related to RTW in earlier studies within a population of employees with mental health problems (Dewa, Goering, Lin & Paterson, 2002; Nieuwenhuijsen et al. 2006; Klink, 2002; Schroer, 1993). Elimination of non significant factors was based upon the Wald statistic (<.05), with the factor with the highest *p*-level being removed first. The results of the stepwise logistic regression analysis for the prediction of baseline partial return to work, 3 month partial return to work and 3 month full return to work are presented in Table 5.

Cross-sectionally RTW-SE was the strongest predictor of partial RTW. In addition the chances for partial RTW were higher for younger people, women and employees with shorter absence spells. Longitudinally, RTW-SE remained the sole significant predictor of partial RTW after three months. Full RTW after three months was best predicted by baseline work resumption, but RTW-SE was of additional predictive value. Finally longer absence duration at baseline slightly decreased the chance for full RTW at three months. It can be concluded that, in accordance with our expectations (hypothesis 7), a higher baseline RTW-SE score was both cross-sectionally and longitudinally predictive of work resumption.

Table 5. Logistic regression results for significant baseline predictors of full and partial RTW

	Wald	p value	Exp(B)	95% C.I. for Exp(B)
Partial return to work at baseline				
RTW-SE	44.67	.00	1.31	1.20 - 1.41
Age	4.34	.04	0.99	0.9899
Female	4.27	.04	1.22	1.01 - 1.47
Absence duration	20.02	.00	1.04	1.02 - 1.05
Partial return to work at 3 months				
RTW-SE	9.20	.00	1.45	1.14 - 1.86
Full return to work at 3 months				
RTW-SE	7.07	.01	1.40	1.09 - 1.79
Absence duration	10.25	.00	0.96	0.9398
Baseline partial return to work	6.44	.01	2.29	1.21 - 4.33

RTW-SE= Return to Work self-efficacy

DISCUSSION

The aim of this study was to explore the preliminary psychometric qualities of a newly developed Return-to-Work self-efficacy scale. To our knowledge this is the first study that measures this specific type of self-efficacy and relates it to an actual behavioural outcome within a longitudinal design. Several indicators of construct validity were investigated and the overall the patterns of relationships between RTW-SE and the variables investigated met theoretical expectations. The questionnaire was of excellent internal reliability, had adequate test-retest reliability, proved to be responsive to changes over time and was a robust predictor of actual return to work within three months.

Predictive validity. Our results showed that RTW-SE was predictive of the return to work status (not returned versus partially or fully returned) after three months. By using this behavioural outcome measure, combining subjective and objective measures, our study distinguishes itself from many other validation studies that use subjective self-report measures only. Actual RTW is an important outcome measure that not only reflects worker wellbeing, but also includes financial benefits, for example, for the worker, the employer and society. The fact that RTW-SE proved to be predictive of actual RTW further indicates that the occupational performance domain was adequately sampled by the questionnaire, representing issues that are relevant for employees with mental health problems.

The predictive value of the instrument remained stable when several other relevant variables such as gender, age, duration of sick leave and initial return-to-work status were controlled for. The concept of SE therefore contributed to a better understanding of the underlying mechanisms for return to work among employees with mental health problems. Because RTW is embedded in a broad context (such as clinical, organizational and societal) in which many stakeholders have an influence, it can be expected that a variety of other contextual factors can play a role in the prediction of successful RTW (Sanderson, Nicholson, Graves, Tilse & Oldenburg, 2008) that were not included in this study. Many of these contextual factors (such as supervisory behaviour) might be reflected in the RTW beliefs the individual holds, thereby offering an interesting higher-order

construct for clinical and research purposes. The nature and magnitude of the role SE plays within the return to work process, as compared to other variables, needs to be explored more in detail in future studies.

Unfortunately, the timeframe of our data was not sufficient to witness the full return to work of the majority of the sample. Self-efficacy might play a different role in the prediction of the RTW for the cases that were still sick-listed after three months. Longer follow-up data are advisable in order to capture full return to work for the majority of the sample and possible relapses in absenteeism.

In addition it should be noted that the SE baseline measurement on which these predictive results are based, are gathered on average 9-20 weeks after the onset of the sickness absence. Research shows that the nature and magnitude of predictors can vary depending on the different lengths of time out of work (van der Giezen, Bouter & Nijhuis, 2000). In order to make our predictive findings generalizable in a broader context, it is advisable that future studies include workers in the earlier stages of their absence and from different countries.

Finally future studies could investigate the relationship with RTW-SE with other outcome measures. The RTW-SE scale could be interpreted as a measure of expectations about work functioning. For people who have resumed their work (as part of our research population did) the scope of the questionnaire might have shifted from expectations about work performance to subjective evaluation of actual work performance. It might be interesting to explore the predictive value of the RTW-SE scale for actual work performance after a period of sick leave, by comparing the RTW-SE scores with supervisor or colleague ratings of work-functioning or self-reports about work functioning.

Reliability. Because we wanted the RTW-SE scale to be useful for evaluative purposes, the stability of the instrument over time is an important feature of the questionnaire. We did find adequate test-retest reliability over a two-week period. However, it should be noted that RTW-SE is not a trait and can easily fluctuate over time within an individual, depending on day-to-day experiences (for instance a phone call from a colleague, or a rainy versus a sunny day). The lower test-retest correlation we found within the subgroup with mental health problems at baseline might be indicative for this. One of the depressed workers in the expert group that assisted in the item generation mentioned for example '*If I fill out this questionnaire before or after working out in the gym, I will probably give different answers to some of the questions*'. Especially if people receive treatment (as was the case in part of our test-retest sample) a rapid increase in SE is to be expected. The 'acute phase', in which many sick-listed employees with mental disorders find themselves, implies a dynamic nature of SE.

Construct validity. As mentioned before, the preliminary results on the construct validity were promising as the RTW-SE measure correlated with variables like general SE, locus of control, coping mental health and physical workload in a manner that is consistent with theory. High general SE and low depression were most strongly related to higher RTW-SE scores, but were also clearly distinct from RTW-SE, indicating a separate and unique construct.

A limitation regarding the construct validity is that we used self-report instruments for all the variables studied, which might lead to common method variance. The levels and the range of the correlations (between 0 and .51) do not strongly support this notion. Furthermore, the nature of the SE concept, aiming to capture subjective expectations, makes other methods such as observation less suitable for avoiding common method variance.

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To provide more information about the construct validity of the RTW-SE scale, future research should ideally include a 'gold standard' that captures the same construct. Until this gold standard exists, future studies might compare RTW-SE with other work-related or specific SE scales, such as the 'self-efficacy for RTW items for muskoskeletal disorders' scale (Lötters, Franche, Hogg-Joshnson, Burdorf & Pole, 2006) or the 'General work skills self-efficacy scale' (Waghorn, Chant & King, 2005).

Relevance for employees with physical health problems. It should be noted that part of the sample consisted of people with physical disabilities, while the questionnaire was specifically developed for employees with mental health problems. Our analyses showed minor differences in the magnitude or significance of our results between the total sample and the sub sample with mental health disorders. These differences appeared in the test-retest analysis and the correlations with general SE and locus of control. These results seem to be due to small sample size (N=65 for the total retest group and N=37 for those retested with a mental health disorder at baseline) and are probably unrepresentative for the entire population. For all the other relationships studied no notable differences were found between employees with predominantly physical health problems compared to those with mental health problems. The consistency of the results across populations might suggest that the RTW issues that were selected to match the specific situation of people with mental health problems are not that unique and also apply to a certain extent to other sicklisted workers. We did find higher RTW-SE scores however for physically disabled workers than for those with mental health disorders, suggesting that at least some of the items for expected work problems were less relevant to them. Also, people with physical disorders often report (minor) psychological problems as well. It is illustrative for example that only 17% of the employees in the first sample reported a mental health problem as the reason for their sick leave, while validated questionnaires show that 67% of all individuals in that sample had mental health problems that reached clinical levels at baseline. Although mental health complaints did not reach clinical thresholds within the whole sample, co-morbidity might explain the similar patterns across populations.

Practical implications and conclusions

The RTW-SE scale has many characteristics that make it attractive to vocational service providers, occupational health care workers and researchers. The questionnaire is nicely balanced with respect to its general focus and the concrete information it offers. The items are formulated with respect to general job demands and with full work resumption as a clear reference point. These features allow the scale to be used in a variety of occupations and over the course of the RTW process, even after people have fully returned to work. The instrument is likely to have a ceiling effect though, when used on a non-clinical population that experiences no work participation problems. The scale can be broadly used to monitor intervention results for sick-listed employees by both clinicians and researchers.

Concurrently the items are both specific and directed towards a clear behavioural outcome. This makes the scale of high predictive value for this specific behaviour (RTW) and offers the care provider concrete information about the nature of their client's RTW expectations. Reintegration professionals are often confronted with patients who seem 'unmotivated' to return to work, or fail to put skills to use in an occupational setting that were learned in a protected clinical setting (Gage, 2004). A better grasp of RTW expectations might provide care providers with tools to manage this problem, enabling a more precise match of support to the assistance needs. A further advantage of the instrument is that concrete information can be derived from a relatively short

scale, making it suitable to administer to people with mental health problems (who may experience concentration problems).

In future studies programs may be developed and evaluated that aim to enhance RTW-SE. Selfefficacy theory offers many opportunities for the development of interventions that enhance SE. Bandura emphasises the role of performance attainment as the strongest re-inforcer of SE. When we apply this to RTW-SE, experiences of work resumption will clearly have an impact on the levels of RTW-SE. Stimulating success experiences by gradual RTW for example and reducing the risk of negative work performance experiences will be key elements in effective interventions.

Because of its predictive value, the RTW-SE scale may be used as screener in either clinical practice or the occupational setting to indicate the direction of the guidance concerning RTW. Care providers may offer additional interventions (for example to enhance SE) based on RTW-SE scores. For both screening and treatment evaluation purposes it would be beneficial that future studies gather RTW-SE scores from healthy workers, for the purposes of comparison.

To conclude, this study has emphasised the importance of the construct of self-efficacy in the return to work process for employees with mental health problems. The specific SE measure that was validated in this study, the RTW-SE, showed encouraging psychometric properties and was easily administered within the target population across a variety of occupational settings. The instrument addresses the relevant expectations about RTW for employees with common mental health problems and predicts actual RTW success. This makes the RTW-SE scale a potentially valuable tool both in (occupational) health care settings and for research.

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CHAPTER 3

EFFECTIVENESS OF WORK-FOCUSED COGNITIVE BEHAVIOURAL THERAPY ON RETURN TO WORK AND SYMPTOM RECOVERY



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ABSTRACT

The aim of this study was to compare the effectiveness of two individual-level psychotherapy interventions: (1) treatment as usual consisting of cognitive behavioral therapy (CBT) and (2) workfocused CBT (W-CBT) that integrated work aspects early into the treatment. Both interventions were carried out by psychotherapists with employees on sick leave because of common mental disorders (depression, anxiety, or adjustment disorder). In a quasi-experimental design, 12-month follow-up data of 168 employees were collected. The CBT group consisted of 79 clients, the W-CBT group of 89. Outcome measures were duration until return to work (RTW), mental health problems, and costs to the employer. We found significant effects on duration until RTW in favor of the W-CBT group: full RTW occurred 65 days earlier. Partial RTW occurred 12 days earlier. A significant decrease in mental health problems was equally present in both conditions. The average financial advantage for the employer of an employee in the W-CBT group was estimated at 5,275 US Dollars compared with the CBT group. These results show that through focusing more and earlier on work-related aspects and RTW, functional recovery in work can be substantially speeded up within a regular psychotherapeutic setting. This result was achieved without negative side effects on psychological complaints over the course of one year. Integrating work-related aspects into CBT is, therefore, a fruitful approach with benefits for employees and employers alike.

INTRODUCTION

In recent years, effective treatment of employees suffering from mental health problems has received increasing attention (Glozier, 2002; Goeztel, Ozminkowski, Sederer, & Mark, 2002; Nieuwenhuijsen, 2004; Seymour & Grove, 2005; Wang, Adair, & Patten, 2006). This is especially the case for mental disorders with a high (and increasing) prevalence rate within the working population, such as depression, anxiety, and adjustment disorder (Andrea et al., 2004; Boedeker & Klindworth, 2007). These disorders are also called 'common mental disorders' (Nieuwenhuijsen, 2004). Such disorders are associated with impaired work functioning and problems in work participation such as long-term sick leave (Kessler et al., 2006; Sanderson & Andrews, 2006; Seymore & Grove, 2005; van der Bossche & Houtman, 2007).

Decreased work participation due to mental ill health is problematic as it leads to immense costs to employers, the 'tax payer', and insurance companies (Goetzel, Hawkins, Ozminkowski, & Wang, 2003; Greenberg et al., 2003; Seymore & Grove, 2005; Stress impact, 2006). Furthermore, decreased participation in work has direct effects on people's well-being. Those who are unable to participate in work lose a valuable source of social support and interpersonal contacts (Plaisier, 2009; Seymore & Grove, 2005); they might lose part of their income and consequently tend to develop even more (severe) psychological symptoms (Price, van Ryn, & Vinokur, 2002). Not surprisingly, work participation is rated by sick people as the third most important aspect of their quality of life (Bowling, 1995). Employees on sick leave with mental disorders would, therefore, benefit from interventions that enable them to return to work.

Although many interventions aimed at the reduction of mental health complaints have been developed and evaluated (e.g., Butler, Chapman, Forman, & Beck, 2006), less scientific evidence is available on methods that successfully enhance return to work (RTW) for workers with common mental health disorders (Rebergen, 2009; Nieuwenhuijsen, Bultmann, Neumeyer-Gromen, Verhoeven, Verbeek, & van der Feltz-Cornelis, 2008). In particular, the effectiveness of psychotherapeutic interventions on RTW is largely unknown, while this type of intervention is often delivered to workers with common mental health problems (Kessler et al., 2003; Stress Impact, 2006; ten Have, de Graaf, Vollebergh, & Beekman, 2004). The findings of the few studies

in which psychotherapeutic interventions (in most cases CBT) have been evaluated, show that they were equally or less effective in enhancing RTW compared with other interventions, such as CBT-based guidance provided by occupational physicians (Blonk, Brenninkmeijer, Lagerveld, & Houtman, 2006; de Vente, Kamphuis, Emmelkamp, & Blonk, 2008, Rebergen, 2009; Lander, Firche, Tornemand, Andersen, & Kirkeskov, 2009; Nystuen, Hagen, & Herrin, 2006).

The small number of controlled studies on the effects of psychotherapy on RTW to date underlines the need for more research in this field, and also the necessity of adapting existing psychotherapeutic interventions. There are some indications that work-directed interventions in combination with cognitive-behavioral therapy (CBT) components are effective with respect to RTW for those absent with common mental health problems (Blonk et al., 2006; Schene, Koeter, Kikkert, Swinkels, & Mc Crone, 2007; van der Klink, Blonk, Schene, & van Dijk, 2003; and for a review see Rebergen, 2009). For employees absent with musculoskeletal disorders (including low back pain) such multimodal approaches (that combine interventions on health condition and work) have also been proven to stimulate RTW (Loisel et al., 1997; Durand & Loisel, 2001; Arnetz, Sjögren, Rydéhn, & Meisel, 2003, Anema et al., 2007; Lambeek, van Mechelen, Knol, Loisel, & Anema, 2010).

In regular CBT, offered by mental health professionals, a focus on work and RTW is often lacking (Kidd, Boyd, Bieling, Pike, & Kazarian-Keith, 2008; Keuzenkamp, Kok, & van Seters, 2002; Rebergen, 2009). The effectiveness of psychotherapy on RTW may, therefore, be enhanced when work (or RTW) is more explicitly addressed during treatment and psychologists (CBT experts) are trained in workplace issues. The current study evaluates the effectiveness of work-focused CBT provided by psychotherapists with regard to RTW for employees on sick leave owing to common mental health problems.

The work-focused CBT intervention (W-CBT) employs the same conceptual framework as is used for regular CBT, which is largely based on the work of Beck (1976). In short, CBT theory states that dysfunctional (coping) behavior and mental health symptoms are not merely the consequence of a stressful situation (e.g., work pressure), but that the appraisal of this situation (cognition) plays a crucial role. CBT can be used to intervene in any of these three components (situation, behavior, and cognitions) from both a cognitive and a behavioral perspective. The relationship between cognitive change and behavior change is complex and interactive, with change in one domain promoting change in the other, and vice versa (Meichenbaum & Cameron, 1982; Wright, 2006). Two main intervention approaches within CBT can be distinguished, targeting a change of 'dysfunctional cognitions' and acquiring of effective coping skills, for example, by following a graded activity principle (Beck, Rush, Shaw, & Emery, 1979; Buttler et al., 2006; Ellis, 1997; Hobbis & Sutton, 2005; Longmore, & Worrell, 2007).

The central idea behind the work-focused intervention is that any CBT technique may be applied to the work context, in order to achieve regular psychotherapy treatment goals and RTW. We expected that CBT techniques applied to the work context might change a stressful work situation (e.g., the client might decide to ask for a transfer to another department), change the appraisal of work stressors (e.g., the client may feel less incompetent when the supervisor is not satisfied with his work), or change the dysfunctional behavior itself (e.g., stimulating gradual RTW as a form of behavioral activation). Hence, integrating (return to) work aspects would contribute to a change in dysfunctional work-related behaviors or symptoms, thereby facilitating RTW.

In W-CBT special attention was given to gradual exposure to the workplace because this element was included in two previous CBT-based interventions (Blonk et al., 2006; van der Klink et al., 2003) that proved to be effective in RTW. Following graded activity principles, we assumed that work participation could best be stimulated by gradually exposing patients to the work setting.

Gradual work resumption can help individuals develop more effective coping skills to deal with (return to) work-related stressors. According to several authors (e.g., Blonk et al., 2006; van der Klink et al., 2003) these coping skills can best be acquired and strengthened gradually within the workplace itself. For instance, Blonk and colleagues describe how gradual work resumption may foster experiences of success. That is, "*By performing the tasks individuals are able to do (with respect to duration, intensity or complexity for instance) individuals may acquire a sense of self-efficacy and control. Exposure to work may also provide experiences that challenge dysfunctional beliefs. The correction of dysfunctional beliefs is viewed as one of the mechanisms that can explain the effective method to stimulate effective coping, secure success experiences at work, and challenge dysfunctional beliefs, thereby promoting full RTW (see also Noordik, van Dijk, Nieuwenhuijsen, & van der Klink, 2009; van Rhenen, Schaufeli, van Dijk, & Blonk, 2008).*

The aim of the current study was to evaluate the effectiveness of CBT with additional integrated modules addressing work and return to work (W-CBT) compared with regular psychotherapy (in this case CBT). The empirical evidence and a priori explanations for the effectiveness of work-focused CBT described above gave rise to the following hypotheses. *Hypothesis 1a: Work-focused cognitive behavioral therapy (W-CBT) will be more effective with respect to RTW compared with regular CBT. Hypothesis 1b: Because of its effectiveness in RTW, W-CBT will, from an employers' perspective, be economically superior compared with regular CBT.*

The effectiveness of CBT in improving mental health has been widely demonstrated in controlled trials for a variety of disorders including mood and anxiety disorders (Buttler et al., 2006). Various studies in which CBT-based interventions were evaluated among sick-listed workers with common mental health problems have shown that symptoms decrease over time, irrespective of treatment content (see for example: Schene et al., 2007; Nieuwenhuijsen, 2004; van der Klink et al., 2003, Blonk et al., 2006). It was, therefore, expected that the current two types of CBT would not differ in mental health outcomes. This gave rise to the following hypothesis on mental health. *Hypothesis 2: Work-focused cognitive behavioural therapy (W-CBT) will be equally effective respect to improving mental health compared with regular CBT*.

METHODS

Participants

Employees on sick leave (100% absent at the onset of their absenteeism and not fully returned to work at the start of treatment) due to psychological problems (common mental health disorders) were recruited to participate in the study by clinical therapists from an outpatient mental health centre. These 'common mental health' disorders include one or more of the following diagnoses according to DSM-IV criteria (APA, 1994): Adjustment Disorder, Undifferentiated Somatoform Disorder, Anxiety Disorder (Post-traumatic Stress Disorder was excluded), or a Mood Disorder (Major Depressive Disorder was excluded). From an ethical perspective, we excluded those with more severe mental disorders at this point, until the effectiveness of W-CBT could be established for the less severe groups.

As depicted in Figure 1, 208 out of 250 eligible clients agreed to participate. A total of 168 clients filled out the first questionnaire (response rate 67%). The main reason for non-participation was 'the burden of filling out questionnaires'. One person reported conflict at work. Participants worked in a variety of jobs, such as administrative jobs (13%), commercial service jobs (19%), health care (20%), education (6%), trade (6%), construction (5%), civil services (5%), and transport (3%). In addition, the companies in which the participants were employed varied in size: 30%

worked in companies with fewer than 30 employees, 29% in companies with 30-100 employees, and 41% in companies with over 100 employees. Other baseline characteristics of our sample and the duration of the treatment participants received are presented in Table 1.

Procedure

During intake at the mental health center, employees were screened for inclusion criteria (see above) by a clinical therapist. When a client met these inclusion criteria, the therapist would briefly describe the study and hand over an information brochure about the research project. Upon acceptance, approval of the proposed treatment plan, and signing of an informed consent, the baseline questionnaire was sent to the client per mail. Treatment sessions generally started one week after the first questionnaire was filled out. Follow-up questionnaires were sent at fixed times: one, three, six, nine, and twelve months after baseline. Clients who did not return the 1-year follow-up questionnaire were contacted by telephone in order to retrieve the follow-up RTW data.



Figure 1. Flowchart participant recruitment. CBT= Cognitive Behavioral Therapy; W-CBT= Work-focused Cognitive Behavioral Therapy.

Table 1. Baseline characteristics of participants and treatment duration

		CBT group (n=79)	W-CBT group (n=89)	Total (n=168)
Demographics (client characteristics)				
Mean age (sd)		41.3 (10.4)	40.2 (9.6)	40.7 (9.9)
Gender (% female)		67%	54%	60%
Married or cohabiting	*	67%	86%	77%
Lower vocational/general secondary education		37%	37%	37%
Intermediate vocational education		27%	35%	31%
Higher education		36%	27%	31%
Disorder & Treatment characteristics				
Adjustment disorder (MHC diagnosis)		62%	72%	67%
Anxiety (MHC diagnosis)		15%	12%	13%
Depression (MHC diagnosis)		18%	16%	17%
Other mental disorder (MHC diagnosis)		5%	-	2,4%
Mean DASS stress score (sd)		12.8 (4.9)	11.42 (4.6)	12.1 (4.8)
Mean SCL90 depression score (sd)		40.1(11.8)	38.9(10.4)	39.4(11.0)
Mean SCL90 anxiety score (sd)		21.9(8.3)	22.5(8.3)	27.9(10.6)
Mean MBI emotional exhaustion score (sd)		3.5(1.7)	3.3(1.8)	3.4(1.8)
Mean weeks on waiting list of MHC (sd)	*	4.4 (2.6)	5.9 (2.9)	5.2 (2.9)
Mean number of therapeutic sessions		11.4(3.6)	11.1(3.7)	11.2(3.6)
Mean months in therapy		5.7(2.6)	5.5(2.9)	5.6(2.7)
Work Characteristics				
Mean weekly working hours by contract (sd)		33.7 (6.6)	33.2 (7.9)	33.4 (7.3)
Mean weeks of sick leave (sd)		9.4 (8.2)	8.8 (5.0)	9.1 (6.7)
Mean work resumption %		16.9 (25.9)	14.1 (21.9)	15.4(23.9)

Note. W-CBT= work-focused cognitive behavioral therapy; CBT= cognitive behavioral therapy; MHC= mental health center; sd= standard deviation.* significant difference between the intervention groups at the p<.05 level.

Design

In a quasi-experimental design, four nearby departments of a mental health center in a large urban area recruited participants for this study. Each department employed about 15 psychotherapists. The therapists who participated in this study were recruited by their management team, and all therapists attended a meeting organized by the research team at the start of the project, in which the rationale for and procedure of the trial were explained.

To avoid contamination between treatment groups, the departments were assigned to perform either regular cognitive behavioral therapy (CBT, 2 departments) or CBT according to the workfocused protocol (W-CBT, 2 departments). Registration and allocation of clients to a specific therapist occurred centrally for all departments. This process did not involve content-driven choices on the part of either the therapist or the client. Clients were assigned to one of the departments based on proximity to their home address. Exceptions were sporadically made in cases of long waiting lists at a certain department (clients were then invited to visit another department). There were no a priori reasons to believe that the clients in the various departments differed with respect to socio-demographic background, severity of complaints, or any other variable.

Interventions

Cognitive Behavioral Therapy (CBT) was performed according to a protocol that is widely used and acknowledged as state-of-the-art treatment for work-related mental health problems in the Netherlands (Keijsers et al., 2000). Based on the diagnosed disorder, the therapist could choose out of different versions of this protocol (specific versions exist, for example, for burnout, adjustment disorder, and depression). Each version of this CBT protocol consists of a basic module that focuses on identification of the problem and on reduction of symptoms (e.g., enhancing mood and activation). After this disorder-specific basic module (covering about 6 sessions), one or more optional modules were chosen in dialogue with the client for the remaining sessions. It is possible that regular CBT incorporated work issues when clients decided to address this topic. The protocol consists generally of 12 sessions in total (in practice it was 11.4 sessions over the course of 5.7 months, see Table 1).

Work-focused cognitive behavioral therapy (W-CBT) consisted of the regular treatment (CBT) plus a module focusing on work and the return to work. The work-focused module was integrated in each session according to a newly developed protocol (van Schie, Blonk, & Lagerveld, 2005), consisting of elements used in similar interventions that were evaluated in earlier trials (van der Klink et al., 2003; Blonk et al., 2006). As described before, it was central to the treatment that therapists addressed work issues in an early phase and used work (and the workplace) as a mechanism or a context to reach their treatment goals (such as activation, time structure, social contact, regular activity, and increasing self-esteem).

To integrate this central idea into each session, the W-CBT treatment consisted firstly of specific work-related (homework) exercises/interventions that were additional to regular CBT interventions (such as drawing a RTW plan). Secondly, regular CBT interventions or exercises were framed as much as possible in the work context (such as work-focused psycho-education or work-focused behavioral experiments to challenge dysfunctional thoughts). In addition to these two work- related components, treatment time could also be spent on non-work issues (e.g., marital problems). However, even in these cases, therapists were encouraged to relate these non-work issues (at least partly) to work (e.g. by asking how work could help to decrease extensive worrying about marital problems). A more detailed description of the specific work-related interventions in each subsequent session is described below.

In the first session, a work-related explanation of and perspective on the symptoms was given. For example, "Work can offer several things, such as structure and self-esteem, which are beneficial to your recovery" or "You won't recover from your symptoms just by sitting at home, it would probably even get worse". In the second session job characteristics were inventoried and a problem analysis of the work situation was made (i.e., concrete tasks and their frequency and

duration were described. In addition, these tasks were ranked, comparable to an 'anxiety hierarchy' used in exposure in vivo techniques). In the third session an elaborate, gradual (stepwise) RTW plan was drafted: therapist and client would agree per step on 1) the activities or tasks the client would perform, 2) for how many hours each task would be performed, and 3) whether altering of workplace characteristics was necessary.

Well-balanced work demands were explicitly stated (e.g., in terms of working hours and/or task complexity) such that secure success experiences and learning experiences would be enhanced. Some clients started, for example, by 'attending the weekly team meeting', while others quickly resumed their former tasks for limited periods of time. The presence of beneficial work characteristics (like structure and social contact) was also taken into account in planning RTW. In the fourth and the following sessions, RTW was evaluated, and clients were stimulated to take the next step and, in addition, to extend their work resumption until full return was achieved. During these sessions relapse prevention with respect to RTW was also discussed. In each session clients were encouraged to discuss their plans with their occupational physician and employer. Similar to regular CBT the W-CBT protocol consists generally of 12 sessions in total (in practice this was 11.1 sessions over the course of 5.5 months, see Table 1).

Treatment integrity

In order to safeguard adequate implementation of the W-CBT, psychologists in the experimental condition received a group training course (of 1.5 hours twice) in the protocol; this consisted of a lecture (presenting state-of-the-art knowledge on RTW interventions) and an interactive component (e.g., discussing questions and perceived obstacles or doubts raised by the therapists). In addition, the therapist had a meeting with a clinical psychologist from the research team every six weeks. In these meetings, both positive experiences and difficulties with W-CBT experienced by the therapists were discussed and suggestions were made for applying the protocol to participating clients. The attendance of these meetings was high, partly due to the clear support of the management team for the research project. An indication of the treatment integrity was retrieved from the participants, who were asked about six core items of the protocol in the first follow-up questionnaire: (1) analysis of problems at work, (2) inventory of tasks and their current execution possibilities, (3) discussing strategies for RTW, (4) discussing strategies for handling problems when back at work. (5) making a detailed work-resumption plan, and (6) evaluating RTW progress. A composite scale score was computed that included these six items (scale score ranged from 0-6). The experimental group scored significantly higher than the control group (4.53 versus 2.43, F(1,82)=12.67, p=.00), indicating adequate treatment integrity. The proportion of clients from the experimental group that reported the presence of the first five elements varied between 54% (for items 1 and 4) and 84% (for item 5). Item 6 was reported by 27% of the clients, but was only applicable to those who had resumed work.

Measures

Return to work (RTW) was operationalized in several ways, including two time-dependent variables. Firstly, the duration of full RTW was defined as the length of time in calendar days from the start of the treatment until full return to work within one year, as reported by the participants. Full return to work was defined as working the number of hours specified in the labor contract, except if this was still on a 'therapeutic' basis (with adjusted tasks and/or reduced responsibilities). Secondly, partial RTW was defined as the length of time between the start of treatment and the first partial increase in working hours. Further, the number of RTW steps (changes in hours worked) from start of treatment until full RTW were calculated for each participant. Based on

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these RTW steps, information on RTW relapses (a decrease in weekly work hours owing to mental health problems) was extracted. Participants may have taken RTW steps (resuming part of their working hours) before the onset of therapy. These steps were not taken into account in the measure of partial RTW, because they fell outside the time of the intervention. Finally, the percentage of work resumption (as compared with contract hours) at baseline as well as work status (proportion of not, partially, or fully at work) at each measurement wave were calculated. *Mental health problems* were operationalized as symptoms of stress, depression, anxiety, and burnout. For all measures higher scores reflect higher levels of mental health problems.

Stress was measured using the 7-item subscale 'Stress' from the shortened *Depression, Anxiety, & Stress Scale* (DASS-21; Lovibond & Lovibond, 1995; de Beurs, van Dyck, Marquenie, Lange, & Blonk, 2001). A 4-point severity scale (from '0' not applicable" to 3 "very applicable") was used to measure the extent to which stress had been experienced over the previous week. A sample item is "I had difficulty relaxing". The DASS is a measure with a good reliability and validity (de Beurs et al., 2001). Cronbach's alpha in our study was .92. Stress was measured at every measurement wave, except the second (one month after baseline).

Depression and Anxiety were measured using two subscales of the Symptom Checklist-90 (SCL-90; Arrindel & Ettema, 2003; Derogatis, 1977). The subscales depression and (generalized) anxiety consist of 16 items and 10 items, respectively. Items referred on a five-point Likert scale (1 "not at all" to 5 "extremely) to the extent to which participants were bothered by symptoms of mental ill health during the previous week (for example: "Thoughts of ending your life" or "Trembling"). The SCL is a validated measure for evaluation of treatment effects and shows good reliability and validity (Arrindel & Ettema, 2003). Both scales were of excellent internal consistency, with alphas above .90. SCL scores were gathered by the therapists at baseline and after approximately three and six months.

Emotional exhaustion was measured using the subscale (five items) of the Dutch version of the *Maslach Burnout Inventory* (Schaufeli & van Dierendonck, 2000). A sample item is "*I feel burned out from my work*". Items were scored on a seven-point Likert scale (*0 "never" to 6 "always or daily"*). This measure has been investigated extensively and psychometric properties are adequate to good (Schaufeli & van Dierendonck, 2000). Cronbach's alpha was .90 in the present study. Emotional exhaustion was measured at every measurement wave, except the second (one month after baseline).

We estimated the average *costs to the employer* of the W-CBT group compared with the CBT group, based on wages paid during the treatment period until full RTW (direct costs). In Western European countries, one day of sickness absence costs an employer about 160 Euro in wages paid (AON, 2010). We calculated the difference in working days (not calendar days) until full RTW between treatment conditions based on contract hours (e.g., seven calendar days of sick leave would account for four working days of sick leave, for those with a 32-hour contract). Per intervention group these working days were multiplied by 160 Euro, and divided by the number of participants per group to estimate the average costs per employee in each group.

Statistical analyses

Multilevel analysis were used for our nested data on mental health (stress, emotional exhaustion, competence, depression, and anxiety) using the MlwiN software package (Rashbash et al., 2000). Three levels were discriminated: repeated measurements (first level, varying per outcome measure from three to five measurements, resulting in 504 to 840 occasions), individuals (second level, *n*=168 participants), and therapists (third level, *n*=38 therapists). Multilevel analysis has advantages with respect to dealing with missing data due to panel attrition (i.e., individuals who

drop out of the study after one or more measurement occasions). Multilevel analysis leads to unbiased estimates when the panel attrition follows a pattern defined as missing-at-random (for more information see Hox, 2010; Little, Schnabel, & Baumert, 2000). In a stepwise procedure a final model was built for each mental health indicator. Firstly, the appropriateness of a third-level model (i.e., whether variance in mental health over time was explained by therapists) was tested, including both a linear and a quadratic time component. In the second step, it was tested whether the course of mental health over time was best described using a model including a linear or both a linear and a guadratic component. In the third step, the presence of random slopes (i.e., whether individuals differ in the way their complaints change over time) was tested for each outcome measure. In the final step, several covariates were added to the best-fitting model. These covariates were the intervention type and variables that correlated significantly with the presence of missing values, or that showed differences at baseline between the two intervention types. For those models that included random slopes, an interaction variable (time*intervention type) was added to investigate whether the intervention type could explain individual differences in the course of mental health complaints over time. Variables in the equation were not centered, because all included variables had interpretable zero values.

The period until full return to work was analyzed using survival analysis (Cox regression). In survival analysis a curve is generated that, in this study, shows how many (what proportion of) individuals remained absent from work over time as a function of the treatment they received. The time lag used in our study was one year. To include participants who had not fully resumed work within this period (n=12), an artificial duration was set at 365 days (censored data). Covariates added in this analysis were those variables that correlated significantly with the presence of missing values, or that showed baseline differences between the two intervention types.

RESULTS

Baseline differences

Randomization checks of both groups were performed for 32 variables including demographics, mental health, and working conditions at baseline, and finally therapeutic characteristics over time using ANOVA and Chi-square tests (see Table 1).¹ The results showed only two significant differences. Clients in the control condition spent less time on a waiting list before the start of treatment (4.4 weeks versus 5.9; F(1,157)=11.53, p<.01) than clients in the experimental condition. In addition, the control condition consisted of fewer married or cohabiting clients (67% versus 86%; $X^2=8.27$, p<.01). Hence, the analyses focusing on RTW and mental health were corrected for these two variables (i.e., time on waiting list and marital status).

Non-response and drop-out analysis

For a number of the 42 clients that refused to participate, gender (n=40), age (n=20), and/or diagnosis (n=21) were registered. Analyses showed no significant differences on these variables between the respondents and non-respondents.

Differences between participants without missing questionnaires (48%) and participants who failed to return one or more questionnaires (52%) were investigated on demographics, mental health condition, therapeutic characteristics, duration of sickness absence at baseline, number of weeks on the waiting list, percentage of work resumption at baseline, and treatment condition.

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Participants who failed to return one or more questionnaires were longer on the waiting list of the mental health center (F(1,164)=9.47, p<.01) and were more often male (46% versus 34%, X^2 =5.0, p<.05). Missing data analysis per measure or scale revealed no noteworthy differences from the aggregated analysis per missing questionnaire (measurement wave). Missing data analysis on the information gathered from the mental health center files (SCL depression and anxiety scores) did not yield any differences on any of the above-mentioned variables at the six-month follow-up.

Table 2. Return to Work (RTW) characteristics per intervention group at follow-up

Return to Work Measure	Intervention	n	Mean		95% CI	SD	Median
Proportion full RTW within	CBT group	75	21%	*			
3 months	W-CBT group	78	36%				
Proportion full RTW within	CBT group	75	55%	*			
6 months	W-CBT group	78	73%				
Proportion full RTW within	CBT group	75	91%				
12 months	W-CBT group	80	96%				
Number of steps until full RTW	CBT group	70	2.94	*	2.58-3.31	1.53	3.0
	W-CBT group	79	4.26		3.75-4.78	2.29	4.0
Days until partial RTW ²	CBT group	68	59.46	*	43.8-75.0	64.34	38.0
	W-CBT group	81	38.06		28.1-48.0	45.03	26.0
Days until full RTW	CBT group	72	175.18	*	149.5-200.8	109.14	165.0
ווטווו גומרו נרפמנוזופווו	W-CBT group	77	136.55		115.4-157.7	93.34	100.0

Note. W-CBT= work-focused cognitive behavioral therapy; CBT= regular cognitive behavioral therapy. * Significant difference between the intervention groups at the p<.05 level.

¹ For reasons of economy, not all variables that were checked are presented in Table 1. The complete variable list and statistical results are available on request from the first author.

² As this variable was not normally distributed (skewness:2.8, kurtosis: 9.8) the non-parametric Mann Whitney test was used to compare the groups.

Return to Work outcomes

In Table 2 the return-to-work characteristics at the one-year follow-up are presented per intervention group. As can be seen, 96% of the work-focused CBT-group (W-CBT) and 91% of the regular CBT group had fully resumed work within one year. This difference in work status was not significant (F(1,119)=0.5, p>.05). Of the participants who had not fully returned to work, almost all had partially resumed work (99%). The proportion of participants who had fully resumed work at three ($X^2=5.6$, p=<.05) and six months ($X^2=3.95$, p=<.05) after baseline did differ between the groups in favor of the W-CBT group. This suggests that the final step towards full RTW occurred earlier in the W-CBT group. This observation is supported by the results on the duration until RTW. With respect to the duration until full and partial RTW, we found a significant difference in favor of the W-CBT group in both the univariate analysis (presented in Table 2) and the Cox regression analysis. Participants receiving W-CBT had a greater chance of full (HR=1.56, p<.05, SE=.19) and partial RTW (HR=1.59, p<.05, SE=.20), indicating a shorter duration until both full and partial RTW in the W-CBT group³ (see Figures 2 & 3). Based on the median scores presented in Table 2, it can be seen that full return occurred 65 calendar days earlier and partial return 12 calendar days earlier in the W-CBT group compared with the CBT group.



Figure 2. Cumulative probability (survival function) of being fully sick-listed from the start of treatment in the 'cognitive behavioral therapy' group (CBT) and the 'work-focused CBT' group (W-CBT).



Figure 3. Cumulative probability (survival function) of maintaining the initial sick leave level from the start of treatment in the 'cognitive behavioral therapy' group (CBT) and the 'work-focused CBT' group (W-CBT).

Return-to-Work (RTW) process

Most participants resumed work gradually: only 7% went directly from 100% sick leave to full return to work. About 35% took two or three steps (each step representing an increase in working hours) until full RTW, and another 35% needed four to seven steps. The remaining participants resumed work in eight to eleven steps (4%), did not reach full RTW (6%), or did reach full RTW but did not provide adequate information on the number of steps (12%). Inspection of Table 2 shows that participants in the W-CBT group used significantly more steps to full RTW (2.94 versus 4.26; F(1,147)=16.72, p<.01), indicating a more gradual RTW process.

In 20 cases these RTW steps did not show a simple increasing trajectory over the course of one year, but showed relapses ('wave-like' fluctuations). Only four cases experienced a relapse after an occurrence of full RTW. These cases were all fully returned again at the one-year follow-up. Although participants receiving W-CBT experienced a RTW relapse more often (15.7% in the W-CBT group versus 7.6% in the CBT group), this difference was not statistically significant (X^2 = 2.64, p=.10).

Effects on mental health problems

Means and standard deviations of mental health complaints for both intervention groups are presented in Table 3, including follow-up scores at one, three, six, and twelve months. At twelve months 98% of the total participant group had finished treatment; at six months (the average treatment duration) this was 65%. Although all mental health problems revealed a decrease at each subsequent measurement wave, average levels of complaints at the six- and twelve-month

³ Both the analyses on full and partial RTW were corrected for baseline differences and missingness.

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follow-up remained elevated compared with healthy populations (Henry & Crawford, 2005; Schaufeli & van Dierendonck. 2000: Arrindel & Ettema. 2003). In Table 4 the proportion of participants is presented that had recovered from their mental health problems at that measurement wave. At the one-year follow-up almost 70% had recovered from burnout and around 50% had recovered from stress. At the six-month follow-up (the average treatment duration) more than half of the sample was recovered from both anxiety and depression. The proportions of recovered employees did not differ between the treatment types for any of the mental health indicators.

Mental Health Problem	Group	Baseline	n	3-month follow-up	n	6-month follow-up	n	12-month follow-up	n
Stress	CBT	12.8(4.9)	78	8.3 (5.7)	58	6.49(4.5)	53	5.5(4.7)	49
	W-CBT	11.4(4.7)	89	7.1 (4.6)	60	6.42(4.3)	55	6.3(5.2)	49
Depression	CBT	40.1(11.8)	78	29.1(11.9)	68	21.8(7.5)	32	-	
	W-CBT	38.9(10.4)	86	26.8(9.1)	70	22.8(8.3)	32	-	
Anxiety	CBT	21.9(8.3)	78	17.6(7.8)	68	13.4(4.9)	32	-	
	W-CBT	22.5(8.3)	86	17.0(5.8)	70	13.6(4.7)	32	-	
Emotional Exhaustion#	CBT	3.5(1.7)	79	2.5(1.5)	49	2.16(1.2)	48	1.65(1.2)	46
	W-CBT	3.3(1.8)	89	2.4(1.3)	54	2.41(1.5)	51	1.97(1.5)	45

Table 3. Means (and standard deviations) of mental health problems per intervention group

Note. W-CBT= work-focused cognitive behavioral therapy; CBT= cognitive behavioral therapy; NA= Not available. # Because of its work-relatedness, emotional exhaustion was only measured at follow-up when participants had (partially) resumed their work.

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Table 4. Proportion of clients recovered from mental health problems at each measurement

	Group	baseline	n	3-month follow-up	n	6-month follow-up	n	12-month follow-up	n
Recovered from burnout (%)	CBT W-CBT	25.3 36.0	7 8	36.7 50.0	49 54	54.2 52.9	48 51	69.6 66.7	46 45
Recovered from stress (%)	CBT W-CBT	5.1 6.7	7 8	32.8 36.7	58 60	39.6 36.4	53 55	53.1 49.0	49 49
Recovered from anxiety (%)	CBT W-CBT	14.1 9.3	7 8	33.8 30.0	68 70	59.4 53.1	32 32	-	
Recovered from depression (%)	CBT W-CBT	2.6 1.2	7 8	36.8 35.7	68 70	65.6 62.5	32 32	-	

W-CBT= work-focused cognitive behavioral therapy; CBT= cognitive behavioral therapy; Thresholds used: 2.20 (burnout), 4.72 (stress), 12 (anxiety males), 14 (anxiety females), 21 (depression males), 23 (depression females).

To examine the effects of the W-CBT on the course of mental health problems, multilevel analysis was conducted. For 'Stress' and 'Emotional Exhaustion" five measurement waves were analyzed over a period of one year. For depression and anxiety three measurement waves were used over a period of six months.

For none of the mental health indicators could a three-level structure be found within the data. This indicates that differences in mental health problems over time were not explained by the differences between individual therapists. A negative linear time component was observed in each outcome variable (p<.05, z values varied between 4.87 and 10.5), indicating that all mental health problems decreased over time. A (positive) quadratic component was present for emotional exhaustion, stress, and depression (p < .05, z values varied between 3.0 and 7.3), but not for anxiety (z=1.24, p=.21). These quadratic components showed that the decrease in complaints was steeper in the first months for exhaustion, stress, and depression. A comparison with the fixed model revealed the presence of random slopes in the equations for emotional exhaustion ($X^2_{(1)}=6.2$, p<.05) and stress ($X^2_{(1)}$ =12.5, p<.01), but not for depression and anxiety. Thus, clients varied significantly in how their levels of exhaustion and stress changed over time. However, this individual variation could not be explained by the treatment condition as none of the Time*Condition interaction terms (for exhaustion and stress) in the final model were significant. Similar to what was seen in the earlier models, the final model presented in Table 5 shows that a linear decrease over time was present for all mental health indicators, and this decrease was steeper in the first months (positive guadratic component) for exhaustion, depression, and stress.

Table 5. Results multilevel analysis: Effect of intervention type on the course of anxiety, depression, stress, and emotional exhaustion over time

	Exhaus	tion#	Depression		Depression Anxiety		Stress	
Parameter	В	SE	В	SE	В	SE	В	SE
Intercept	3.46	.29	42.96	2.05	23.39	1.44	13.39	.89
Time	24*	.04	-4.62*	.59	-1.48*	.14	-1.33*	.13
Time ²	.01*	.00	.29*	.11	-	-	.07*	.01
Condition (1=W-CBT)	22	.23	64	1.51	.29	1.07	91	.71
Condition * time	.03	.03	-	-	-	-	.12	.08
Loglikelihood (deviance)	1755.334		2484.080		2235.535		3057.498	
Time coding (months)	0,3,6,9,	12	0,3,6		0,3,6		0,3,6,9	,12
N observations	507		338		338		536	

Note. W-CBT= work-focused cognitive behavioral therapy; Time squared was not included in the final model when the first model did not reveal a significant effect of a time-squared component; The 'Condition * time' interaction term was not included in models without random slopes; All analysis were corrected for baseline differences between the intervention groups and selective missingness (gender, partner, and weeks on the waiting list).

* Significant difference between the intervention groups at the p<.05 level.

Because of its work relatedness, emotional exhaustion was only measured at follow-up when participants had (partially) resumed their work.

Economic consequences for the employer

The shorter duration until full RTW in the W-CBT group has financial advantages for employers who pay wages to absent and non-productive employees. Calculations showed that employers in the CBT group paid on average €16,727 (US\$24,220) in wages per employee during entire the sick leave period from the start of the intervention until full RTW, whereas employers in the W-CBT group paid €13,085 (US\$18,952) (€3,642 or US\$5,275 difference). This implies a 20% cost reduction for employers whose employees receive W-CBT.

DISCUSSION

To our knowledge, this was the first study in which work-focused cognitive behavioural therapy (CBT) carried out by psychotherapists was compared with regular CBT, among employees on sick leave due to common mental disorders. In line with our expectations we found that clients who received the work-focused treatment (W-CBT) resumed work earlier than those who received regular CBT. Psychological complaints declined significantly over time. As expected, no difference in complaint reduction was observed between the treatment groups.

Return to work: Main findings and interpretations

Concerning our main outcome measure, return to work, we found robust and large effects in favor of W-CBT: these clients fully resumed work 65 days earlier than clients receiving regular CBT. Most clients (over 90%) from both groups had resumed work within one year, but W-CBT achieved this result about two months earlier. We also found that gradual work resumption occurred earlier and was implemented more often in the W-CBT intervention group. Participants in the W-CBT group reported earlier partial RTW and used more (and consequently smaller) steps to reach full RTW compared with those in the regular CBT group. Finally, temporal relapses in the RTW process occurred more often in W-CBT, but this difference was not statistically significant. These results largely support the first hypothesis (1a).

Outcome studies in similar target groups show a large range in reported RTW outcomes. The current findings are within the upper range compared with these other studies, for both 'time until full RTW' and 'levels of RTW' at one-year follow-up (Nieuwenhuijsen, 2004; De Vente et al., 2008; van der Klink et al., 2003, and see for a review Rebergen, 2009). In addition, the effectiveness of W-CBT in promoting RTW is in line with study findings that suggest that CBT as currently practiced, without a specific focus on work (resumption), has little effect on RTW (Blonk et al., 2006; de Vente et al., 2008).

Based on theories underlying CBT (e.g. Bandura, 1977; Beck, 1976; Meichenbaum & Cameron, 1982), the effectiveness of W-CBT might be explained by various mechanisms, both from a cognitive perspective (e.g. dysfunctional work-related beliefs have changed) and a behavioral view (e.g. RTW related behavior was reinforced). Our results suggest that work-directed gradual exposure, that is well guided early and partial work resumption, are important factors in explaining the effectiveness of W-CBT. The shorter time until full RTW in the W-CBT group may (in part) be attributed to earlier partial RTW: "well begun is half done". This notion needs to be investigated more extensively, but is supported by preliminary findings in an earlier study (Blonk & Lagerveld, 2007). In addition, our observations during the meetings with the therapists support the idea that W-CBT is predominately distinguished from regular CBT by the focus on early and gradual RTW. Stimulating both early partial RTW and the final step towards full RTW by creatively integrating these techniques into regular CBT interventions were important issues that required the therapists to change their regular ways of thinking and acting. The findings of one other study in which CBT offered by clinical psychologists was evaluated may shed additional light on the importance of stimulating early and gradual RTW (de Vente, Kamphuis, & Emmelkamp, 2001). This CBT intervention addressed work issues, thereby predominantly focusing on mental (and physical) health and following a symptom-contingent approach. This CBT intervention appeared not to be effective in promoting RTW, though. The more favourable outcomes of our alternative W-CBT intervention may be explained by an earlier, more integrated focus on RTW, including full RTW. As mentioned in the introduction, we expected that gradual RTW might be a mechanism that promotes full RTW because it enables people to acquire the necessary coping skills to deal with (return to) work stressors and practice these skills in the workplace. In line with the CBT technique of gradual exposure and graded activity, partial work resumption may challenge dysfunctional cognitions and secure success experiences at work. An important cognition that could explain the effectiveness of W-CBT may be 'work-related self-efficacy', that is, the belief that one can fulfill one's work demands or work role (Lagerveld, Blonk, Brenninkmeijer, & Schaufeli, 2010a). When the RTW process is adequately guided, resulting in mastery experiences, self-efficacy theory would predict that employees will be more persistent and successful in their RTW process (Bandura, 1977; Bandura, 1986; Lagerveld et al., 2010a). Possible effective components in W-CBT such as early RTW, gradual RTW and the promotion of work-related self-efficacy should be further clarified in future research.

An obvious concern is that (early) work resumption might increase relapses in sick leave, when workers have not fully recovered from their symptoms. In the process towards full work resumption, W-CBT participants experienced somewhat more relapses (although this was not a statistically significant difference). These relapses were, however, not of a permanent nature, but showed a wave-like pattern leading to full RTW within one year. This may indicate that participants in the W-CBT use more experimental learning with respect to RTW. RTW relapses had no adverse effect on mental health problems over the course of one year. Beneficial effects of early gradual RTW should, however, be interpreted within the context of the treatment offered. The gradual RTW process in W-CBT was well guided and included many creative, tailored RTW strategies (not only gradually increasing work hours).

To conclude, we argue that employees receiving CBT with an integrated, tailored and early focus on (gradual return to) work resume their work faster than employees receiving regular CBT.

Economic consequences

The outcomes on RTW may have important consequences for employers as well. The cost reduction for an employer in the Netherlands was estimated at 20 percent (US\$5,275 gain for an average individual sick leave case) per employee, based only on wages paid during sickness absence. As the work-focused treatment did not entail additional costs (for example, the interventions did not differ with respect to contact hours or number of professionals involved), one might assume this intervention to be economically superior to regular care. The current estimations support hypothesis 1b. Although the absolute savings for a single case are moderate, a 20 percent reduction of costs associated with sick leave due to mental health problems is of relevance, considering the prevalence numbers of this type of absenteeism (e.g., mental disorders account for 30% of long-term sick leave in the Netherlands, UWV, 2007). Finally, the estimations were rather conservative, as we did not incorporate any other associated costs, such as productivity loss and hiring of replacement costs. To draw firmer conclusions about cost effectiveness, net cost-benefit analysis should be performed in future research. These analyses should take the above mentioned additional costs into account, as well as incorporate (more detailed) information on other direct and indirect costs (e.g., employers' insurance against sick leave payments, costs of the intervention, other health care utilization costs, and wages on the individual level; AON, 2010; Joensuu & Lindström, 2003; Rebergen, 2009).

Mental health problems: Main findings and interpretations

In line with our expectations (hypothesis 2), we found that all mental health problems decreased over time, irrespective of the type of treatment. In addition, both interventions achieved (on average) clinical recovery for emotional exhaustion in 12 months and near recovery levels for depression and anxiety at 6 months. Stress levels, however, remained clearly elevated compared with healthy controls.

These results are in line with those of other studies that reported elevated symptom levels at follow-up and equal patterns of symptom reduction for CBT-based RTW interventions compared with care as usual (Blonk et al., 2006; de Vente et al. 2008; Nieuwenhuijsen, 2004; Schene et al., 2007; van der Klink et al., 2003).

Several explanations may be proposed for our finding that W-CBT was more effective with respect to RTW, but not for the reduction of symptoms. Firstly, a temporal increase of symptoms evoked by confrontation with stressors while returning to work might be counterbalanced by the

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beneficial effects of work at the same time, or later. In the current study, time-spans were used that appear to be too long to unravel these patterns. Secondly, the current results on RTW and mental health complaints can be seen as an indication that psychotherapists in the W-CBT group managed to implement a less symptom-contingent (but more time-contingent) approach. Clients with similar symptom levels were more often successfully motivated to RTW in the W-CBT group compared with the regular CBT group. In the latter group psychologists may have waited until symptoms were further reduced. Finally, it may be assumed that CBT (offered to both groups) already leads to the best achievable results, and that the beneficial influences of work can hardly contribute to a further reduction of complaints. We have to note, however, that the effectiveness of regular CBT in reducing the symptoms of employees with common mental health problems is a subject of debate (de Vente et al., 2008; Blonk et al., 2006). As we did not compare the W-CBT treatment with a no-treatment control group, we cannot test this critique. However, even if the observed symptom reduction in this study was caused by natural recovery, it can be expected that this process would occur in both groups equally.

The elevated levels of mental health problems at follow-up may be a point of concern with respect to RTW, as even sub-threshold levels have been related to increased work-loss days in the future (Rai, Skapinakis, Wiles, Lewis, & Araya, 2010). These results can be explained by the time of measurement (at the depression and anxiety follow-up only 65 % of the participants had finished their treatment) or by higher original stress levels, as suggested in earlier studies (Blonk et al., 2006; de Vente et al., 2008). Perhaps the participants in our sample had regained their initial levels of stress, which were higher compared with a healthy reference group.

We conclude that W-CBT does not impede recovery from psychological complaints, compared with regular therapy.

Limitations

An important limitation of our study is the lack of patient randomization: such a randomized design is considered the state-of-the-art design for intervention studies. The consequential potential biases should be kept in mind when interpreting our findings (i.e. attributing the effects to differences in treatment). However, several points may contribute to the robustness and validity of our findings. Firstly, the allocation of participants to the intervention occurred centrally for all departments. This process did not involve content-driven choices on the part of either the therapist or the client. Secondly, the analysis performed on baseline group differences showed two significant differences out of the 32 variables investigated.⁴ These results could, however, be statistically expected based on the number of analyses performed at the .05 level. Controlling for these two significant variables in our statistical analysis did not yield any noteworthy differences. In addition, we conducted some exploratory analyses to examine the influence of potential other relevant variables (e.g., educational level, age, work characteristics, severity of mental health complaints) on 'time to RTW'. The results indicated the robustness of the effect of W-CBT. Although we cannot completely rule out the theoretical influence of 'unobserved third-variables', we believe that it is not very likely that other variables have played a crucial role in the RTW outcomes.

A second limitation concerns the restrictions of our mental health data. First, for all mental health outcomes, substantial dropout occurred; however, this was not selective for most of the variables studied. Even though we controlled for the few variables that revealed selective dropout, our

⁴ Those variables that were identified as relevant to RTW trajectories of our target population were included (Cornelius, van der Klink, Groothoff, & Brouwer, 2011; Lagerveld et al., 2010b).

results might be biased. Furthermore, we were unable to gather information on psychological well-being in the longer-term and at critical RTW events (e.g., during increases in work hours). Our follow-up period did not exceed one year, although it is not uncommon for clients to experience relapses after this, especially among those suffering from depression (Westen, Novotny, & Thompson-Brenner, 2004). Therefore, we cannot draw any conclusions about the long-term effectiveness of the treatments. This is especially the case with respect to depression and anxiety, as we were able to collect information on these mental health indicators only at the six-month follow-up.

Another point of concern is the limited amount of information about treatment integrity. Data obtained from the clients indicate, nevertheless, that work elements were more often present in the W-CBT treatment condition. Moreover, the results on partial RTW and the RTW process also support the treatment integrity: As described in the protocol, therapists in the W-CBT group managed to stimulate gradual and early work resumption during the therapeutic sessions by integrating work-related aspects early into therapy. Finally, because of the separate team structures there was no spillover of W-CBT knowledge or strategies from the therapists of W-CBT group to those of the CBT group.

Strengths: Contribution to knowledge on effective RTW interventions

To our knowledge, this was the first study in which an integrated work-focused CBT treatment carried out by psychotherapists was compared with regular CBT. Our findings may therefore offer a valuable contribution to the current knowledge of RTW interventions for workers with common mental health problems. As described in the introduction, controlled intervention studies in this field are rare, especially for interventions provided by mental health professionals. This can be partly attributed to the fact that not many researchers succeed in establishing a randomized trial, owing to ethical and practical constraints (Lander et al., 2009; Myette, 2008; Rebergen, 2009). There is, however, a great need for more evidence-based action within the field of reintegration, especially for clients with mental health problems. We hope that this quasi-experimental study can serve as a fruitful basis for designing future, more rigorously controlled, RCT's.

Because two very similar treatments were compared in this study, it was possible to gain a better impression of the additional value of a work-related focus. Even within RCT designs, the comparison of interventions applied by different professionals or at different levels of intensity often leads to difficulty in explaining intervention effects. It is also important to note that our CBT condition can truly be viewed as 'care as usual', as this type of treatment is the 'treatment of choice' for many different disorders worldwide (Buttler et al., 2006). Furthermore, as our sample consisted of a substantial number of employees, with a variety of common mental health complaints (including minor depression), and with a variety of jobs, our study may have good external generalizability for the population of employees with (common) mental health disorders. The results of our study are unique in the sense that they show the promising effects of a workfocused intervention that can be integrated easily into regular psychological therapy at relatively low costs. Contrary to the findings of earlier studies (Brouwers, Tiemens, Terluin, & Verhaak, 2006; Bakker et al., 2007), the current findings show that using W-CBT, professionals with a rather distal relation to the workplace, such as psychotherapists, are able to enhance their effectiveness in promoting RTW.

Other recommendations for future research

First, our results should be replicated in a randomized controlled design. Ideally, a future RCT should include a less intensive treatment condition (such as CBT-based treatment provided by less

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expensive professionals) next to a treatment-as-usual condition (regular CBT). Such a three-armed trial could address the question whether making psychotherapy more work-focused is the most (cost) effective solution. Secondly, future research should also include workers with more severe disorders, like major depression, which is expected to become one of the leading causes of work disability (WHO, 2002). Finally, future research could improve the definition and operationalization of the complex concept of RTW (Wasiak et al., 2007): for example, by paying more attention to its sustainability (e.g., relapses), the quality of RTW (e.g., work functioning), and the views of different stakeholders on successful RTW. As variations in the operationalization of RTW can lead to different conclusions about treatment effectiveness, it is important to use a variety of indicators to measure RTW in future studies.

Practical implications

Based on the promising results of this quasi-experimental study, mental health professionals are recommended to discover how a more profound focus on early and gradual RTW, using W-CBT, works in their practice. A successful implementation of W-CBT may depend on several factors, such as the attitudes and skills of clinicians, and RTW policies.

The fact that CBT is the worldwide treatment of choice for many common mental disorders provides many opportunities for implementation. Clinicians currently providing CBT may be stimulated to apply W-CBT when they are reassured by our mental health outcomes in the still-common fear that symptoms will increase with early RTW (van Oostrom, et al., 2010; Kidd et al., 2008). Furthermore, it was our experience that the therapists from the W-CBT group were able to change protective, symptom-contingent habits because of the project meetings and positive experiences when implementing the protocol in practice.

In addition, we feel that a fundamental debate within the mental health service sector on the role of work issues is needed. Long-term sick leave due to mental ill health is a multi-factorial problem that requires stakeholder collaboration and the attuning of different treatments to one another (Vlasveld et al., 2009). Mental health professionals might help break the boundaries by integrating knowledge from occupational professionals with their own expertise on the treatment of mental health problems.

It is important to note that, to obtain the most favorable effects from W-CBT, RTW policies that allow individuals to return to work, fully or gradually, should be present. These RTW policies will be dependent on national social security systems (Stress impact, 2006). For instance, offering modified work to (temporarily) disabled workers is possible in several countries such as the United States, Canada, Australia, the Netherlands, and the UK (Krause, Dasinger, & Neuhauser, 1998). We expect that in the near future more and more countries will develop policies to facilitate (gradual) RTW (Rebergen, 2009), which will increase the practical relevance and cross-cultural generalizability of our findings.

Conclusion

In sum, our findings showed that through focusing more and earlier on work-related aspects, psychotherapists can substantially speed up RTW in employees. This result can be achieved without negative side effects on symptom recovery. Integrating work-related aspects with cognitive behavioral therapy can be a fruitful approach with benefits for employees, employers, and care providers.

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CHAPTER 4

SELF-EFFICACY GROWTH AS A MECHANISM OF CHANGE IN WORK-FOCUSED THERAPY? EXPLORING AND COMPARING SELF-EFFICACY CHANGE PATTERNS



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ABSTRACT

This study examined patterns of self-efficacy-change during Work-focused Cognitive Behavioural Therapy (W-CBT) and regular CBT. In an earlier study, W-CBT enhanced return to work (RTW), compared with regular CBT. By describing and comparing self-efficacy change in both treatments, we aim to get insight into the mechanisms that may explain the effectiveness of W-CBT.

RTW self-efficacy was measured 5 times within 9 months among 168 employees who were on sick leave with common mental health problems and received either CBT (N=79) or W-CBT (N=89).

Descriptive analyses revealed that self-efficacy growth generally followed a wave-like pattern in both treatments. Participants who returned to work later seemed to follow a delayed self-efficacy growth curve. Multilevel analysis confirmed a curvilinear growth, which was equal in both treatments.

Self-efficacy growth followed a curvilinear and generally wave-like pattern. RTW professionals may prepare their clients to deal with these fluctuations. As self-efficacy growth did not differ between the two treatments, we tentatively conclude that self-efficacy cannot serve as a mediator to explain the effectiveness of W-CBT.

INTRODUCTION

Common mental disorders (CMD) refer to mild to moderately severe mental disorders (such as depression, anxiety, or adjustment disorder) with high prevalence rates. Research from several Western countries suggests that at any one moment around 15% of the working-age population suffers from a common mental disorder (OECD, 2012). CMD are often associated with decreased work participation (e.g., sick leave, disability benefits) and decreased work functioning (e.g. lower productivity at work) (Kessler et al., 2006; Goeztel, Ozminkowski, Sederer, & Mark, 2002; Seymour, & Grove, 2005; Knudsen et al., 2010). Employees with CMD suffer more long-term periods of sick leave compared to employees with other health problems (Knudsen et al., 2010; Koopmans, Roelen, & Groothof, 2008). Considering the high prevalence and its impact on work participation and work functioning, it is not surprising that mental health at the workplace is a priority challenge for the labour market (OECD, 2012; OECD, 2014). Because of the economic burden and the suffering of individual employees, it is important that return to work (RTW) is facilitated among employees with CMD.

Cochrane reviews on RTW interventions for workers with depression (Nieuwenhuijsen et al., 2008) and adjustment disorder (Arends et al., 2012) show that there is a lack of high quality studies and the authors cautiously conclude that regular treatment methods are not very effective in enhancing RTW. It is therefore essential to improve occupational or mental health interventions provided to workers with CMD. However, how these interventions should be designed is not yet clear. How can we learn from the few intervention studies that have established positive effects on RTW for employees with CMD? There is some evidence that treatments that combine clinical and work-related strategies are more effective than clinical interventions alone (Wåhlin, Ekberg, Persson, Bernfort, & Öberg, 2012; Arends et al., 2012; Nieuwenhuijsen et al., 2008; Lerner et al., 2012; Kröger et al., 2015). Based on the principle that not all symptoms have to disappear before (partial) RTW is started, such work-related strategies promote an early RTW in order to use the workplace as a setting to rehearse coping skills and test cognitions. These strategies also focus on finding solutions for RTW-barriers supported by a graded RTW plan (Bouman, van Ede, de Jong, Nieuwenhuijsen, & van der Veen, 2015). However, not all interventions that used similar components effectively enhanced RTW (Brouwers, Tiemens, Terluin, & Verhaak, 2006; Bakker et al., 2007; Noordik, van Dijk, Nieuwenhuijsen, & van der Klink, 2009). It remains largely unclear

what work-related intervention strategies are effective, under what conditions and why they might contribute to RTW. As intervention studies often examine intervention *packages* that consist of a variety of modules or components, it is hard to identify the effective components of an intervention (Ejeby et al., 2014). In order to make optimal use of earlier intervention research across a variety of settings, it is important to identify the underlying mechanisms of effective RTW interventions (Michie, Johnston, Francis, Hardeman, & Eccles, 2008).

Focus of the current study

In the current study, we will examine the effect of W-CBT on self-efficacy change during the RTW process as compared with regular CBT. Our study is part of a larger quasi experimental intervention study that showed that W-CBT effectively reduced the time to full RTW with 65 days compared with regular CBT (Lagerveld et al., 2012). Both treatments resulted in a similar decrease of mental health problems. By describing and comparing self-efficacy change in both treatment conditions, we hope to get more insight into the underlying psychological mechanisms that may help to explain the effectiveness of W-CBT on RTW. This insight may contribute to the design of more effective RTW care in different contexts and populations.

Why focus on Return to work self-efficacy (RTW-SE) as a mechanism of change?

Bandura's notion of self-efficacy seems a promising concept to describe mechanisms of change for RTW interventions. In short, self-efficacy is the belief that an individual has in his/her capacity to perform a specific behaviour successfully (Bandura, 1977; Bandura, 1986). When applied to the context of RTW, workers should feel confident about their abilities to return to the workplace and perform their job successfully. This specific type of self-efficacy can be viewed as 'RTW selfefficacy' (RTW-SE) (Lagerveld, Blonk, Brenninkmeijer, & Schaufeli, 2010a). According to Michie and colleagues (2008) an advantage of using the concept of self-efficacy is that, as opposed to many other determinants of behaviour, evidence-based techniques to influence self-efficacy are available. Self-efficacy has been identified as a key determinant of various behaviours by leading theories, including those that have been applied to the context of return to work (Brouwer et al., 2009: Franche & Krause, 2002: Michie et al., 2008). Both qualitative and quantitative studies support the role of low (work-related) self-efficacy as a barrier for RTW (Brouwer, Reneman, Bültmann, van der Klink, & Groothoff, 2010; Huijs, Koppes, Taris, & Blonk, 2012; Lagerveld, et al., 2010a; Nieuwenhuijsen, Noordik, van Dijk, & van der Klink, 2013; Volker et al., 2015; van Beurden et al., 2015; Andersen, Nielsen, & Brinkmann, 2012). The alternation of hindering efficacy cognitions might therefore be a valuable strategy to promote RTW (van Beurden et al., 2015; Brouwer et al., 2010; Lagerveld, Blonk, Brenninkmeijer, Wijngaards-de Meij, & Schaufeli, 2012; Lagerveld et al., 2010b).

Based on self-efficacy theory (Bandura, 1986), it can be expected that workers with low levels of RTW-SE will postpone their return to work and be less successful in their attempts to return to work compared with their high self-efficacious counterparts (Lagerveld et al., 2010a). Individuals with low self-efficacy may experience increased anxiety in difficult situations and this may disrupt their performance. In this way, their low efficacy beliefs act as a self-fulfilling prophecy. In turn, disrupted performance may lower levels of self-efficacy, thereby creating a downward spiral (Maddux & Meier, 1995; Maddux, 2009). It is believed that low efficacy cognitions that characterise individuals with CMD are inaccurate by the nature of their disorder (i.e., they do not reflect individuals' actual capacity) (Maddux, & Meier, 1995). Hence, self-efficacy beliefs are an important determinant of RTW, which can potentially be modified during the RTW process.

Using Work-focused CBT (W-CBT) as a means to enhance RTW-SE

CBT is a state of the art treatment method for people with CMD. It acknowledges the importance of intervening at different interrelated levels: the situation (e.g. a conflict at work), behaviour or symptoms (e.g. sleeping problems or being absent from work), and cognitions (e.g. self-efficacy beliefs). A main characteristic that distinguishes CBT from other approaches is the aim to change ineffective cognitions into more effective ones (cognitive restructuring; Beck, Rush, Shaw, & Emery, 1979). In order to reach their treatment goals, CBT therapists often pay attention to enhancing self-efficacy compared with, for example, psychodynamic therapists (Watzke, Rueddel, Koch, Rudolph, & Schultz, 2008). Bandura has proposed several strategies that can be used to enhance self-efficacy. In descending order, starting from the most potent to least potent sources of self-efficacy these strategies are: *personal mastery* (i.e. positive reinforcement by success experiences when executing the target behaviour), *vicarious learning* (learning through modelling of successful peers), *verbal persuasion*, and *arousal* management (controlling one's emotional arousal) (Bandura, 1991a). Commonly used therapeutic strategies in CBT (such as graded personal mastery and modelling) have been found successful in enhancing self-efficacy in a variety of settings (Maddux, & Meier, 1995; Kazdin, 2007; Goldin et al., 2012).

In W-CBT RTW self-efficacy can be stimulated by a variety of work-focused techniques. Personal mastery (successful RTW experience) is fostered by rehearsing adequate coping skills (e.g., arousal management in stressful work situations) or by exposure therapy (a gradual exposure to the work situation such as gradually increasing work hours, tasks and task complexity) (Noordik et al., 2009; van der Klink, Blonk, Schene, & van Dijk, 2003; Blonk, Brenninkmeijer, Lagerveld, & Houtman, 2006). Gradual exposure (with temporal work adjustments) can prevent work-related avoiding behaviour and stimulate employees with CMD not to cease their RTW efforts prematurely. Avoiding RTW may reinforce employees' beliefs about lacking skills to perform successfully, and hence undermine self-efficacy. Gradual exposure may challenge unrealistic (negative) self-efficacy cognitions. Moreover, work-focused cognitive restructuring techniques can teach people to perceive their work accomplishments in terms of successes and to attribute those successes to their own efforts or ability. This is important because individuals with CMD are likely to ignore or discard success experiences, which are inconsistent with their low self-beliefs (Maddux, 2009). In addition, work-focused cognitive restructuring may help individuals to interpret possible setbacks in their RTW process less as failures, thereby protecting their self-efficacy levels. Finally, therapists may stimulate self-efficacy through common therapeutic techniques such as verbal persuasion (e.g. explaining the importance to rehearse coping skills in the work setting) or vicarious learning (e.g. explaining how other patients with similar symptoms were able to return to work successfully).

Bandura recommends the use of particularized measures of self-efficacy because self-efficacy refers to a specific behaviour and will vary from task to task (Bandura, 1986). For an optimal effect on RTW, Social Cognitive Theory would predict that the self-efficacy cognitions addressed in therapy should be targeted at the behavioural level of returning to work, as opposed to general self-efficacy (Bandura, 1991a; Bandura, & Adams, 1997; Maddux & Meier, 1995). Hence, while we expected regular CBT to enhance general self-efficacy, we expected that the 'Work-focused' CBT techniques improved specific (return to) work efficacy cognitions.

Changes of self-efficacy over time

The few studies that examined the development of RTW-SE during the RTW process for workers with CMD receiving (occupational) health care reported increased self-efficacy over a period of 3 to 18 months (Nieuwenhuijsen et al., 2013; Hees, de Vries, Koeter, & Schene, 2013; van Beurden et

al., 2015). These studies reported an overall linear increase of self-efficacy over time, but did not study more complex change patterns that may underlie such linear increases. One might expect that self-efficacy fluctuates over time, as work resumption itself does not always follows a simple linear increase (Lagerveld et al., 2012; Rebergen, 2009). Care providers may need more detailed information about self-efficacy change patterns to be able to guide individual RTW trajectories in a better way. For example, it may be important for care providers to know whether wave-like fluctuations should be interpreted as a red flag, or are part of a normal RTW trajectory. In order to get a better grasp on the psychological processes that occur during the process of RTW, the current study will describe self-efficacy change patterns and relate these to the RTW status.

METHOD

Procedure and participants

In a quasi-experimental study, four departments of an outpatient mental health centre were assigned to offer either cognitive behavioural therapy (CBT, 2 departments) or work-focused CBT (W-CBT, 2 departments). Allocation of the clients to a therapist occurred centrally for all departments based on proximity to the clients' home address. This allocation process did not involve any content-driven choices. Once allocated to a department, employees on (partial or full) sick leave due to CMD were recruited to participate by clinical therapists. Employees with major depression or posttraumatic stress were excluded. Upon approval of a treatment plan, and signing of an informed consent, the baseline guestionnaire was sent to the client by the researchers.

A total of 168 clients filled out the baseline questionnaire (response rate of 67%). Follow-up questionnaires were sent at fixed times: 1, 3, 6, and 9 months after the baseline questionnaire. Mean age of the participants was 40.7 years (*SD* = 9.9), 60% was female, and 37% had low levels of education. Participants were diagnosed by a clinical therapist according to DSM-IV criteria with an adjustment disorder (67%), anxiety (13%), minor depression (17%) or other mental health disorders (2.4%). At baseline participants were on average 9.1 weeks on sick leave and 38.6% had managed to return to work partially. Compared with the CBT group, the W-CBT group waited longer before treatment started (5.9 weeks versus 4.4. weeks), and were more often married or cohabiting (86% versus 67%). No differences between the treatment groups were present for any of the other baseline variables, such as the type of disorder (diagnosis), level of partial RTW, or self-efficacy. Characteristics of the participants and procedure are more extensively described in an earlier publication (Lagerveld et al., 2012).

Treatment

Both regular CBT and W-CBT consisted on average of 11 individual sessions and were delivered by clinical psychologists. Regular CBT was performed according to protocols that are widely used and acknowledged as state-of-the-art treatment for common mental health problems in the Netherlands (Keijsers et al., 2000). This CBT protocol varied somewhat per disorder type, but always consisted of a basic module that focuses on identifying the problem and on symptom reduction (e.g., enhancing mood and activation). After this disorder-specific basic module, one or more optional modules for the remaining sessions were selected together with the client.

Work-focused cognitive behavioural therapy (W-CBT) consisted of the regular treatment (CBT) plus an integrated module focusing on work and RTW (Van Schie, Blonk, & Lagerveld, 2005). Central to W-CBT was that work issues were addressed in an early phase of the treatment, and work (and the workplace) was used as a context to reach treatment goals (such as activation, time structure, social contact, meaningful daily activity, and increasing self-esteem). Work aspects were therefore addressed in each session, starting in the first session. The therapist focused on improving RTW-SE mainly through augmenting personal mastery (enhancing RTW success experiences). In order to enhance success and learning experiences at work, the therapist guided the RTW process of clients with tailored work-related interventions (such as drawing a graded RTW plan). Furthermore, other regular CBT interventions or exercises were framed as much as possible in the work context (such as work-focused psycho-education or work-focused behavioural experiments to challenge dysfunctional thoughts). A more detailed description of the specific work-related interventions can be found elsewhere (Lagerveld et al., 2012).

Measures

Full return to work (RTW) was defined as working the number of hours specified in the labour contract, except if this was still on a therapeutic basis (with adjusted tasks and/or reduced responsibilities). The date of full RTW after baseline was self-reported by participants. Based on this information, we calculated the number of participants that had fully returned at each measurement wave.

Return to Work Self-Efficacy (RTW-SE) was measured with an 11-item scale (Lagerveld et al., 2010a) that captured participants' expectations about fulfilling their work demands or work role when returning to their former job. Participants were asked to respond to statements about their jobs, whilst imagining that they would work their full contract hours the next day (in their present emotional state/state of mind). The items refer to several aspects of work such as the execution of tasks, regulation of emotion, and dealing with failure or low levels of energy while at work. An example item is: 'If I resume my work fully tomorrow I expect that: I will be able to perform my tasks at work'. Response categories vary from 'totally disagree' to 'totally agree' on a scale of 1 to 6. A mean score over the 11 items was used to compute the RTW-SE scale score. RTW self-efficacy was measured at every measurement (baseline and 1, 3, 6, and 9 months after baseline, respectively). The internal consistency of the RTW-SE scale was excellent over time; Cronbach's α varied between .92 and .95.

Analyses

To explore self-efficacy change patterns during the return to work process we first conducted descriptive analyses and visually inspected patterns of self-efficacy change. To further study the course of self-efficacy and test changes between both treatment groups, we modeled the linear and quadratic changes of self-efficacy over time with multilevel analysis, using the MlwiN software package (Rasbash et al., 2000). The best fitting regression line across all available measurements before the occurrence of full RTW was predicted for each individual (the random effects). Depending on the occurrence of full RTW, the number of measurements used to calculate the slopes varied from two to five. For example, if a participant fully returned to work in two months, the self-efficacy measures of the baseline and the 1-month follow-up were used to draw the individual regression line. For those who had not fully returned at nine months (n = 28), a slope was calculated over all five self-efficacy measurements. The effect of treatment condition was analysed by adding the intervention main effects (whereby the experimental condition with time' to the model.

RESULTS

Drop-out analyses

We were able to collect self-efficacy data on all five measurements for 43.5% of the respondents. For 28 respondents, no self-efficacy slope could be calculated due to a lack of follow-up information on either the self-efficacy measure before full RTW and/or on the RTW data. Calculating the slope for an additional six respondents was not possible because they returned to work fully within one month. Differences at baseline were investigated between participants with a slope (n = 134) and participants without a slope (n = 34) for demographics, mental health condition, therapeutic characteristics (e.g. treatment group, duration of therapy), duration of sickness absence at baseline, number of weeks on the waiting list and percentage of work resumption at baseline. Results showed that for participants without a slope, the duration of therapy was shorter (121.3 days versus 174.3 days, F(1,141) = 7.77, p < .01). No significant differences were found on any of the other above-mentioned variables.

Descriptive results of changes in self-efficacy over time in both treatment groups

Table 1 displays mean self-efficacy scores at each measurement wave per treatment group and per work status (fully at work or not). This table shows that average self-efficacy scores in both treatment conditions increased over time, and that this increase was most prominent in the first months and among participants who had fully returned to work. Those without full RTW had lower RTW-SE at each measurement compared with their fully returned counterparts. The W-CBT group seemed to start off with higher baseline RTW-SE. However, as described before, this difference was not significant (F(1,164) = 0.67, p = ns). After 9 months both treatment groups showed similar average RTW-SE scores.

We also visually inspected the individual scores (not presented here), which revealed that selfefficacy change was characterised by a wave-like pattern in 64% of the cases. These individuals showed both increases and small decreases over time, whilst in 95% of the cases with fluctuations the scores increased over a longer time span. No notable differences between the treatment groups were found in the occurrence of these wave-like patterns ($X^2(1)= 0.50$, p = ns). Neither did the occurrence of such fluctuations significantly differ between those who did return to work within 9 months and those who did not ($X^2(1)= 1.78$, p = ns).
Table 1. Self-efficacy scores (means, standard deviations) depending on work status and proportion

 of participants who had fully returned to work at each measurement wave per treatment group

	Baseline	1 month	3 months	6 months	9 months
CBT group (n)	79				
Fully at work	0%	5%	21%	55 %	76%
SE fully at work (SD)	-	4.51(0.54)	4.68(0.72)	4.74(.56)	4.53(0.65)
SE not fully at work	2.77	3.26(0.89)	3.76(0.87)	3.87(0.89)	4.05(0.83)
SE total CBT group	2.95	3.33 (0.91)	3.94 (0.92)	4.33 (0.85)	4.39(0.73
W-CBT group (n)	89				
Fully at work	0%	3%	36%	73%	87%
SE fully at work (SD)	-	4.12(0.08)	4.44(0.61)	4.34(0.76)	4.55(0.62)
SE not fully at work	2.94	3.56(0.75)	3.97(0.78)	3.75(0.85)	3.39(1.05)
SE total W-CBT group	3.07 (0.86)	3.55 (0.74)	4.15 (0.75)	4.17 (0.83)	4.36 (0.85)
Total group (n)	168				
Fully at work	0%	3.9%	28.8%	64.1%	81.7%
SE (<i>SD</i>)	3.02 (0.95)	3.45 (0.83)	4.05 (0.83)	4.25 (0.84)	4.37 (0.79)

CBT= cognitive behavioural therapy; W-CBT= work-focused cognitive behavioural therapy; SE= return to work self-efficacy

To illustrate the development of self-efficacy before and after the occurrence of full return to work, we distinguished 4 groups with different RTW duration. In Figure 1, the average self-efficacy scores at each measurement wave are presented for these 4 groups: those who fully returned within 3 months (group 1, n = 44), between 3 and 6 months (group 2, n = 54), between 6 and 9 months (group 3, n = 27), and those without full RTW within 9 months (group 4, n = 28). Each line in Figure 1 includes a vertical mark to indicate the onset of full RTW. Figure 1 illustrates that, for all groups, average self-efficacy scores increased before full RTW, and this self-efficacy growth either flattened somewhat or stabilised after full RTW. Figure 1 also suggests that full RTW occurred when self-efficacy levels reached on average between 3.8 or 4.5. In line with this trend, group 4 (without full RTW in 9 months) scored on average below 3.8 at 9 months. Figure 1 also shows that each subsequent group that returned to work later showed lower self-efficacy scores at nearly all measurement waves, in comparison to the group that returned to work within 3 months. These overall lower self-efficacy scores were especially pronounced among employees who did not return to work within 9 months (group 4).

The descriptive results presented in Table 1 and Figure 1 should be interpreted with caution because of missing values in self-efficacy scores on one or more measurement waves. To obtain more robust results with respect to self-efficacy change over time and differences between the intervention groups in self-efficacy growth, we conducted multilevel analyses (see below) (Twisk, de Boer, de Vente, & Heymans, 2013).

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Figure 1. Average self-efficacy scores at each measurement wave per subgroup (depending on moment of full RTW).

Multi-level results of self-efficacy change over time in both intervention groups

To further analyse the changes in self-efficacy over time before the occurrence of full RTW, multilevel analyses were conducted (see Table 2). A comparison with the fixed model revealed the presence of random slopes in the equation ($X^2(5) = 21.118$, p < .05). Hence, clients varied significantly in how their levels of self-efficacy changed over time before they fully returned to work. In the random model, a positive linear time component was observed (z = 5.6, p < .05), indicating that self-efficacy increased over time. A negative quadratic component was also present (z = -3.0, p < .05), indicating that self-efficacy growth was most prominent in the first period and stabilised or decreased at the end of the observation period. Hence, the multilevel results confirmed the curvilinear growth trend we found in the descriptive analysis.

To analyse whether self-efficacy growth before the occurrence of full RTW was stronger in the W-CBT group compared with the CBT group, intervention variables were added to the multilevel model (see Table 2). Although a visual inspection of the regression lines suggested that the growth of RTW-SE in the first months was more pronounced in the W-CBT group compared to CBT group, this effect was not statistically significant. Multilevel analyses did not show significant interactions between the type of intervention and the linear time component (z = 0.90, ns), nor with the quadratic time component (z = -1.23, ns). Therefore, we conclude that self-efficacy growth before full return to work, within a period of 9 months, did *not* differ between intervention groups.

 Table 2. Results multilevel analysis: effect of the intervention on the linear and quadratic changes over time in self-efficacy.

Parameter	В	SE	
Intercept	2.82	0.12	
Time	0.39	0.07	*
Time ²	-0.03	0.01	*
Intervention (0 = CBT; 1= W-CBT)	0.20	0.17	
Intervention*Time	0.10	0.11	
Intervention*Time ²	-0.02	0.01	
Loglikelihood (deviance)	1117.27		
Time coding (months)	0, 1, 3, 6, 9		
N observations	431		

Note. SE= standard error; * p < .05; CBT= cognitive behavioural therapy; W-CBT= work-focused cognitive behavioural therapy

DISCUSSION

Considering the major consequences of sick leave due to common mental disorders (CMD) for both individuals affected and for society, it is important that effective return to work (RTW) interventions are available. A better understanding of why certain RTW interventions are effective can be helpful in finding out how future interventions should be (re)designed to be more effective across settings. The aim of the current study was to get a better insight in the role of RTW self-efficacy as an underlying mechanism of change in work-focused cognitive behavioural therapy (W-CBT) and regular CBT for employees with CMD. We first explored detailed patterns of self-efficacy change over 9 months during the RTW process. Secondly, we investigated whether W-CBT resulted in stronger increases in self-efficacy over time as compared with regular CBT. Our analysis showed that self-efficacy increased in a curvilinear and generally wave-like pattern over time in both treatments. However, contrary to expectations, W-CBT was not more effective in enhancing RTW-SE within 9 months compared with CBT.

The course of self-efficacy over time

Multilevel analysis showed that the growth of self-efficacy until full RTW was characterized by a curvilinear pattern, indicating that growth was most pronounced in the first months before full RTW and then flattened over time. Descriptive analyses showed that self-efficacy growth was generally characterized by a wave-like pattern in both treatment conditions. An increase of RTW-SE over time during RTW interventions has been demonstrated before in three other longitudinal intervention studies on RTW-SE among sick listed employees with CMD's (Lagerveld et al., 2010a; Nieuwenhuijsen et al., 2013; van Beurden et al., 2015) and with major depression (Hees et al., 2013). The current study is, however, the first that measured RTW-SE this often (5 times) with relative little time in between measurements (1 to 3 months), which allows for more fine-grained

analyses of changes. In addition, this is the first study that inspected self-efficacy change more in detail with respect to curvilinear and wave-like patterns on the individual level.

Our results may reassure both employees on sick leave and their care providers, knowing that a minor wave-like self-efficacy pattern appears to be normal for most people and that this does not have to obstruct a successful RTW. These fluctuations also occurred in the effective treatment group. In analogy of the stress inoculation training (Meichenbaum, 1985), a care provider can support and prepare the employee with respect to these small relapses. They can be framed as learning experiences and as opportunities that stimulate employees to find new ways to deal with setbacks and more demanding work situations.

Descriptive patterns of self-efficacy change before and after full RTW appear to differ between employees who achieved full RTW early (e.g. within 3 months) compared with those who achieved this later in time (e.g. within 9 months). Employees who returned to work earlier, started off with higher self-efficacy levels compared with those who returned later on. Those with lower baseline self-efficacy levels returned to work later, and appear to follow a delayed self-efficacy growth curve. Our results suggest that a self-efficacy level between 3.8 and 4.5 seems a necessary threshold for full RTW to occur. This finding might be of use to care providers who want to identify high risk cases or offer a better RTW prognosis to their clients. This coincides with Nieuwenhuijsen and colleagues (2013), who proposed that future studies should identify optimal cut-off scores in larger samples of various populations in order to use baseline RTW-SE scores as a practicable screener for RTW duration. We cautiously suggest to use the threshold of 3.8 on the RTW-SE scale as a starting point for identifying these cut-off scores.

Furthermore, self-efficacy scores may be used to make tailored decisions about the treatment and optimal moment for RTW. During the implementation phase of W-CBT we often noted that therapists struggled with finding the best 'moment' for their clients to return to the workplace. Official guidelines are not available for this decision, probably because this remains an idiosyncratic decision in each individual case that requires considering different factors (such as symptom severity, type of job, and possibilities for work adaptations). Current rules of thumb are in practice usually based on the severity of symptoms (Roelen et al., 2012). The additional use of self-efficacy scores might be helpful in determining the best moment for RTW as clients combine both the impact of their mental health symptoms and other factors (such as external barriers) in their self-efficacy score to estimate their current ability to (return to) work. In line with this reasoning, research shows that the severity of symptoms and self-efficacy are interrelated but distinct concepts, where self-efficacy is more predictive of RTW (Nieuwenhuijsen et al., 2013; Lagerveld et al., 2010a).

Why does W-CBT appear to be not superior compared with CBT with respect to self-efficacy growth?

Contrary to our expectations we did not find that W-CBT enhanced self-efficacy better than regular CBT. How can we explain this finding? It is possible that using another design may have led lead to other conclusions. Firstly, determining the effective therapy component in an applied research setting is more difficult compared with a more artificial experimental setting in which a certain change strategy can be 'isolated' to study its effect (Jacobson, & Truax, 1991). Secondly, our study measured self-efficacy at set times, which did not allow us to capture all self-efficacy changes over time (see section on limitations). Thirdly, our comparative therapy design makes it more difficult, due to a lack of power, to empirically demonstrate significant differences, because care as usual (regular CBT) will also stimulate self-efficacy to a certain extent. Bandura (1991a) stated that the strongest influence on self-efficacy is personal mastery (i.e., success experiences regarding the

target behaviour). Although W-CBT had a strong focus on mastery experiences, clients from both intervention groups managed to return to work partially (see Lagerveld et al., 2012). Even working a few hours (partial RTW) might be such a powerful source of self-efficacy that it outweighed the self-efficacy stimulated with therapeutic work-related support. Furthermore, the reduction of mental health complaints that was achieved in both therapies might have had a stronger influence on self-efficacy increases than expected which could not be further enhanced by work-focused techniques. Future research could uncover the links between symptom reduction and self-efficacy, but that it recovers naturally over time, or, alternatively, that participants found other sources to enhance their self-efficacy, outside the therapeutic setting. People rely daily on verbal persuasion as a self-efficacy facilitator by seeking the support of other people in other areas of life (e.g. attempting to lose weight), and they might have done the same for returning to work (Maddux, & Meier, 1995).

Two recent studies demonstrate that a work-focused CBT-based intervention can have added value with respect to RTW-SE growth for employees with CMD (van Beurden et al., 2015; Gjengedal, 2016). For example, preliminary results from Gjengedal (2016) show that RTW-SE growth was significantly larger for clients who received work-focused treatment, compared to their counterparts on a waiting list. These findings make it more likely that both interventions of the current study were able to enhance RTW-SE instead of none. To test whether regular CBT and work-focused CBT both stimulate self-efficacy growth, or whether neither therapy has an independent impact, future research could include a 'waiting list control group'.

Because of the profound effects of W-CBT on full RTW, it would be valuable when future studies unravel its effective components and use these to improve RTW interventions. Because W-CBT differed from CBT with respect to a focus on work issues, work-related factors may be researched as mediating factors (e.g., the quality and implementation of work adjustments). Although the current study could not link the effectiveness of W-CBT to self-efficacy growth, increasing RTW-SE may still be an effective strategy to enhance RTW, in addition to other mechanisms that played a role in W-CBT. Future research could shed more light on this issue by researching the effects of self-efficacy growth on RTW, in addition to the established predictive value of baseline RTW-SE.

Limitations

A first limitation is that we did not use a randomized controlled design with a 'no treatment group'. We should therefore be careful in drawing conclusions about the effects of the W-CBT and regular CBT on self-efficacy. A second limitation concerns the assessment of self-efficacy change during the course of the entire RTW process. Participants were on average 9 weeks on sick leave before the first self-efficacy measurement and almost 40% had started returning to work partially before baseline measurement. Our sample size did not allow, however, to conduct analyses only on those participants who were on full sick leave at baseline. In addition, we measured self-efficacy at set time points during the process. To get a full grasp of the underlying mechanisms involved in the RTW process at the level of individual cognitions, it would have been preferable to measure selfefficacy more often and 'event contingent' (related to RTW actions) instead of 'time contingent'. A more elaborated time-series design using electronic diaries might be a way to resolve this issue. It would be particularly important to measure self-efficacy more often within the first months of treatment, as our data suggested a trend that the effects on RTW-SE of W-CBT were more pronounced in the first months. In case this trend is confirmed in future studies, this would be in line with the finding that most effective RTW interventions stimulate not so much higher RTW rates, but make a difference with respect to the speed of reaching these results (Blonk et al., 2006;

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Lagerveld et al., 2012). Diary studies could also provide further evidence of a causal pathway between self-efficacy growth and RTW behaviour (Goldin et al., 2012).

Conclusion

Self-efficacy followed a curvilinear and generally wave-like growth pattern, which is somewhat delayed for people that return to work later in the process. As self-efficacy growth patterns did not differ between treatments, self-efficacy appears not to be the underlying mechanism to explain the superior effects of W-CBT on RTW as compared to regular CBT. Future studies could use a more elaborated design to test self-efficacy as a mechanism of change and include other concepts that may be better capable of explaining the effectiveness of work-focused CBT. The results of the current study may help RTW professionals to reassure and prepare their clients to deal with minor fluctuations in self-efficacy, which seem part of a normal RTW trajectory. In addition, our results suggest a threshold theory of self-efficacy, that is, one needs a certain level of self-efficacy for successful RTW. The RTW-SE scale might, therefore, help care providers to offer a better RTW prognosis and to tailor interventions to their clients.

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CHAPTER 5

The predictive value of work-related selfefficacy change on RTW



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ABSTRACT

To improve interventions that aim to promote return to work (RTW) of workers with common mental disorders (CMD), insight into modifiable predictors of RTW is needed. This study tested the predictive value of self-efficacy change for RTW in addition to pre-intervention levels of self-efficacy.

RTW self-efficacy was measured 5 times within 9 months among 168 clients of a mental health care organization who were on sick leave due to CMD. Self-efficacy parameters were modelled with multilevel analyses and added as predictors into a Cox regression analysis.

Results showed that both high baseline self-efficacy and self-efficacy increase until full RTW were predictive of a shorter duration until full RTW. Both self-efficacy parameters remained significant predictors of RTW when controlled for several relevant co-variates and within subgroups of employees with either high or low pre-intervention self-efficacy levels.

This is the first study that demonstrated the prognostic value of self-efficacy change, over and above the influence of psychological symptoms, for RTW among employees with CMD. By showing that RTW self-efficacy increase predicted a shorter duration until full RTW, this study points to the relevance of enhancing RTW self-efficacy in occupational or mental health interventions for employees with common mental disorders. Efforts to improve self-efficacy appear valuable both for people with relatively low and high baseline self-efficacy.

INTRODUCTION

Common mental disorders (CMD) are a leading cause of long-term sick leave [1]. It is important that return to work (RTW) is facilitated for employees on sick leave due to CMD. To (re)design interventions that promote RTW it is paramount to know what modifiable factors may stimulate RTW for these workers. Self-efficacy seems a promising factor to target in RTW interventions. Workers with high RTW self-efficacy feel confident about their abilities to RTW and are expected to more be successful and persistent in their attempts to RTW compared to their low self-efficacy source source source that pre-intervention levels of self-efficacy predict RTW among workers with CMD [2, 3, 4].

However, previous studies did not study the effect of self-efficacy *increase* on RTW. Therefore it remains unclear whether improving initial low self-efficacy actually promotes RTW. Baseline self-efficacy may merely be an indicator of cases with a favorable versus an unfavorable RTW prognosis. In addition, the importance of improving self-efficacy may be dependent on the initial levels. Those who start with high levels of self-efficacy are less likely to improve because of a ceiling effect and may have already passed a threshold needed to (partially) RTW. Hence those with high initial self-efficacy levels might benefit less from a further enhancement of self-efficacy. This study therefore investigates whether self-efficacy change, in addition to pre-intervention levels predicts RTW.

METHOD

Employees on sick leave due CMD were recruited via a mental health center where they would receive cognitive behavioral therapy (CBT). Participants received questionnaires at baseline and 1, 3, 6, and 9 months after baseline.

A total of 168 clients filled out the questionnaire at baseline (response rate of 67%). Mean age of the participants was 40.7 years (SD=9.9, 19% was older than 50), 60% was female, and 37% had low levels of education (lower vocational or general secondary education). Participants were

diagnosed according to DSM-IV criteria with an adjustment disorder (67%), anxiety disorder (13%), mild depression (17%) or other mental health disorders (2.4%). At baseline most participants were on full sick leave (61.4%) and have had contact with their supervisor within 2 weeks after of the onset of sick leave (73.7%). Characteristics of the participants and procedure are more extensively described elsewhere [5].

Measures

Duration until full return to work (RTW) was defined as the length of time in calendar days from the baseline measurement until full RTW within 9 months. Full RTW was defined as working the number of hours specified in the labor contract, except in the case of adjusted tasks and/or reduced responsibilities.

RTW Self-efficacy (RTW-SE) was measured with an 11-item, validated scale [2]. Participants were asked to respond to statements about their jobs, imagining that they would work their full contract hours the next day (in their present state of mind). An example item is: 'If I resumed my work fully tomorrow I expect that: I will be able to set my personal boundaries at work'. Response categories varied from 'totally disagree' to 'totally agree' on a scale of 1 to 6.

Analyses

With multilevel analysis we modelled the best fitting regression line across all available measurements before the occurrence of full RTW for each individual. For those without full RTW in nine months (n=28), a slope was calculated across all five measurements. Positive slope scores were viewed as indicators of self-efficacy increase. Subsequently, two individual parameters of self-efficacy (baseline score and linear slope; both derived from the multilevel model) were entered into a Cox regression analysis. The linear slope scores were multiplied by 10 in order to facilitate the interpretation of the Cox Regression results. An earlier publication justifies the use of these individual slopes as linear change was confirmed in a random model [6]. Cox regression generates hazard ratios per predictor, which can be interpreted as a relative risk (compared with a reference group) on the occurrence full RTW. To include participants without full RTW within 9 months, an artificial duration was set at 270 days (censored data).

We repeated the Cox regression analysis for those with high and low levels of self-efficacy, based on a median split of baseline self-efficacy (2.64). In addition, the impact of self-efficacy on RTW was controlled for several potential predictors of RTW for employees with CMD.[5,7,8] These variables were: gender, educational level, age, early contact with the supervisor (within 2 weeks after the onset of sickness absence), treatment type, and severity of depressive symptoms (measured with the depression subscale of the SCL-90). [9] In addition, we adjusted for therapy duration as this variable was correlated with missing values on the self-efficacy change parameter.

RESULTS

Drop-out analyses

For 34 respondents no slope could be calculated due to a lack of follow-up questionnaires or because they were fully at work within one month. Differences at baseline were investigated between participants with a slope (n=134) and participants without a slope (n=34) for demographics, mental health condition, therapeutic characteristics, and baseline characteristics of

sick leave⁵. Results showed that for participants without a slope the duration of therapy was shorter (F(1,141)=7.77, p<.01). No other significant differences were found.

Table 1. Results of Cox Regression analysis: Predictors of duration until full RTW

	Model 1	L	Model	2	Model	3	Model 4	
	(total gr	oup)	(subgro	oup high SE)	(subgro	oup low SE)	(total group)	
Predictors	HR	95% CI	HR	95% CI	HR	95% CI	HR adjusted#	95% CI
Self-efficacy baseline (constant)	2.82*	2.03-3.93	2.04*	1.21-3.45	3.45*	1.76-6.77	3.16*	2.04-4.87
Self-efficacy change (slope)	2.19*	1.71-2.80	2.51*	1.61-3.92	2.31*	1.65-3.24	1.91*	1.46- 2.53

A HR >1 reflects a shorter time to return to work

#Adjusted HR is corrected for gender, age (>50), education (low), severity of depressive symptoms (score on depression subscale of the SCL-90), contact with supervisor (within 2 weeks), therapy duration in days, and treatment type.

* significant at p<.01 level.

Predictive value of self-efficacy change on RTW

Table 1 shows the results of a Cox regression analysis that tested the predictive power of both self-efficacy parameters for time to full RTW. The first model shows that both higher baseline self-efficacy (HR= 2.82, p<.01) and stronger self-efficacy increase (HR=2.19, p<.01) were significant predictors of a faster RTW. Furthermore, the predictive value of both self-efficacy parameters was supported for participants with high and low levels of self-efficacy (see model 2 and 3).

Results of the fourth model showed that, corrected for the influence of other relevant predictors, both self-efficacy parameters still predicted faster full RTW within 9 months. Employees with higher baseline self-efficacy returned to work sooner (HR= 3.16, p<.01). This hazard ratio indicates that a 1-point difference in baseline self-efficacy is associated with a 3.16 higher chance of full RTW. In addition, clients who experienced a stronger self-efficacy increase returned to work faster (HR=1.91, p<.01). This hazard ratio indicates that a 0.10 increase of the self-efficacy slope will result in an almost 2 times higher chance of full RTW.

DISCUSSION

This is the first study that shows that both high baseline (pre-intervention) self-efficacy and selfefficacy increase are important predictors of faster full RTW of employees with CMD. Our results demonstrated the added value of both self-efficacy parameters in predicting RTW compared with other relevant factors, such as the severity of the disorder. The predictive value of baseline RTW self-efficacy over and above psychological symptoms is in line with earlier studies.[2,3,4]

Considering the predictive value of self-efficacy change for RTW, it seems worthwhile to enhance self-efficacy during RTW interventions. Care providers may use techniques to promote self-efficacy as proposed by Bandura (mastery, vicarious learning, verbal persuasion and arousal management). Work-related mastery experiences may be secured through graded exposure to work (i.e. gradual RTW which includes temporal workplace adaptations).[10] Vicarious learning may be stimulated

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by focusing on successful experiences of others with similar problems, for example in group interventions.[11; cf.12] Participants in the current study received CBT that, due to its focus on modifying unhelpful cognitions, may also be well suited to improve self-efficacy.

The current study shows that improving self-efficacy is beneficial, both for employees with high and low baseline self-efficacy. However, there may be subgroups for which this is less effective. Future research may, for example, try to distinguish 'high self-efficacy cases' where further improvement of self-efficacy is no longer a focal point to promote RTW. In addition, Nieuwenhuijsen et al.[3] suggested that interventions for clients with self-reported unfavorable work characteristics should emphasize workplace adaptations instead of focusing on self-efficacy. Although CMD might distort a clients' view on workplace characteristics, trying to improve *realistic* low self-efficacy might indeed be harmful. For example, when individuals are persuaded to reach for goals far beyond their current abilities, there is a higher risk of failure and a further decrease of self-efficacy as a result. This risk may be minimized for example by adequate goal setting, gradual RTW and preparation to cope with setbacks. Furthermore, care providers might investigate whether client expectations for RTW are realistic by checking their history of (mal)functioning at work, recent changes in job requirements, or the clarity of job requirements. Based on such information, it may be decided that additional professional training or permanent job changes are needed to create a better person-job fit and improve work-related self-efficacy.

To conclude, our results show that self-efficacy change is an important predictor of RTW, which underlines the importance of interventions that enhance RTW self-efficacy for employees with CMD.

⁵ For reasons of economy not all variables that were checked are presented. The complete variable list and statistical results are available on request from the first author.

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CHAPTER 6

DIFFERENTIAL EFFECTIVENESS OF W-CBT: WHAT SUBGROUPS BENEFIT MOST FROM W-CBT?



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ABSTRACT

This study examined who benefits most from a CBT-based intervention that aims to enhance return to work (RTW) among employees who are absent due to common mental disorders (e.g., depression, anxiety, or adjustment disorder). We thereby researched the influence of baseline work-related self-efficacy and mental health (depressive complaints and anxiety) on treatment outcomes of two psychotherapeutic interventions.

Using a quasi-experimental design, 12-month follow-up data of 168 employees were collected. Participants either received work-focused Cognitive Behavioural Therapy (W-CBT) that integrated work aspects early into the treatment (n = 89) or regular Cognitive Behavioral Therapy (R-CBT) without a focus on work (n= 79). Treatment outcomes were operationalized as 'duration until RTW' and 'decrease of CMD-symptoms over time'.

Compared with R-CBT, W-CBT resulted in a faster partial RTW, irrespective of baseline selfefficacy. Among individuals with high self-efficacy, W-CBT also resulted in faster full RTW but not for those with low self-efficacy. The effectiveness of W-CBT on RTW did not depend on baseline depressive complaints or anxiety. The decline of mental health complaints did not differ between the two interventions, nor depended on baseline self-efficacy or mental health.

Considering the benefits of W-CBT for partial RTW, we recommend this intervention as a preferred method for employees with common mental disorders, irrespective of their baseline levels of self-efficacy, depressive complaints, and anxiety. For individuals with high baseline self-efficacy, this intervention also results in higher full RTW. For those with low self-efficacy, extra exercises or components may be needed to promote full RTW and increase their self-efficacy.

INTRODUCTION

Common mental disorders in the working population, such as depression, anxiety, and adjustment disorder, are gaining growing attention among researchers (Nieuwenhuijsen, 2004; Seymour & Grove, 2005). The prevalence of these disorders in the working population is high, affecting individuals all over the world (OECD 2012; Steel et al., 2014). Common Mental Disorders (CMD) may result in declined job performance and decreased work participation, such as long-term sick leave (Kessler et al., 2006, OECD, 2012). As such, CMD not only pose a threat to the well-being of individuals who are affected, but also entail considerable societal and financial costs (Seymore & Grove, 2005; OECD, 2012)

Considering the prevalence and impact of CMD, it is essential that research illuminates what methods are successful to enhance return to work (RTW) for employees with CMD. Although there is limited evidence available concerning effective RTW interventions for employees with CMD (Arends, et al., 2012; Nieuwenhuijsen, et al., 2008), research suggests that interventions that combine cognitive-behavioral techniques with work-focused techniques constitute effective treatments (Blonk, Brenninkmeijer, Lagerveld, & Houtman, 2006). In a recent study, we demonstrated that work-focused Cognitive Behavioral Therapy (W-CBT), compared with regular Cognitive Behavioral Therapy (R-CBT), indeed promoted full and partial RTW among employees who were sick-listed due to CMD (Lagerveld, Blonk, Brenninkmeijer, Wijngaards-De Meij, & Schaufeli, 2012).

To implement work-focused CBT as a preferred treatment method for sick-listed workers with CMD, it is important that practitioners believe that this method is adequate for their specific clients (see also Van Dijk, 2014). Practitioners may be concerned that particular clients, for example those with high levels of mental health complaints, may benefit less from work-focused techniques or may even be harmed by these techniques. These concerns were expressed by the

therapists that participated in our intervention and have also been reported by practitioners in other studies (Oomens, Huijs & Blonk, 2009; Lammerts, Schaafsma, Van Mechelen, & Annema, 2016). Therefore, it is essential to investigate the effectiveness of work-focused CBT in particular types of clients with CMD.

Building upon our earlier study (Lagerveld et al., 2012), we examined the influence of baseline RTW self-efficacy and mental health symptoms on the outcomes of work-focused CBT, compared with regular CBT, among employees with CMD. RTW self-efficacy is an overarching construct that relates to the multifactorial nature of RTW, taking into account both mental health symptoms and the work context, which is not only useful for understanding and facilitating the return to work process (e.g., Lagerveld, Blonk, Brenninkmeijer, & Schaufeli, 2010), but may also predict who will benefit most from interventions that aim to enhance RTW (e.g., Kavanagh & Wilson, 1986). In a similar vein, individuals' level of mental health symptoms might be a relevant predictor for treatment success (Blank, Peters, Pickvance, Wilford, & Macdonald, 2008). The insights from this study may help identify clients who are most likely to benefit from W-CBT and R-CBT, match clients with the most appropriate intervention, and adapt interventions to clients' individual needs.

CBT-based interventions for employees with CMD

Although psychotherapeutic interventions are often provided to employees with CMD, the effect of these interventions on RTW are not well understood (Nieuwenhuijsen et al., 2008; Rebergen, 2009). To give more insight into the benefits of combining cognitive-behavioral and work-focused techniques (Blonk et al., 2006; Van der Klink, Blonk, Schene, & Van Dijk, 2003), we conducted an earlier study in which we compared the effectiveness of two CBT-based psychotherapeutic interventions: treatment as usual consisting of regular cognitive behavioral therapy and work-focused CBT (Lagerveld et al., 2012). Work-focused CBT consisted of regular CBT treatment plus a module focusing on work and return to work that was integrated in each session. In a quasi-experimental design, 12-month follow-up data were collected of 168 employees who were on sick leave because of CMD. We found that, compared to the R-CBT group, the W-CBT group returned significantly faster to work, both fully and partially. A similar significant decrease in mental health problems was observed in both intervention groups. Hence, by focusing more and earlier in the intervention on work-related aspects RTW could be substantially enhanced, without negative side effects on psychological complaints.

It should be noted that, as with other psychotherapeutic interventions, not all individuals may benefit to the same degree from work-focused CBT. Since the beginning of modern psychotherapy, researchers and therapists have acknowledged that interventions should be tailored to clients' individual characteristics (see Norcross & Wampold, 2011). To do so, more research is needed with respect to the question 'what kind of intervention works for whom' (Fonagy, 2010; Nicassio, Meyerowitz, & Kerns, 2004). This article examines to what extent return-to-work self-efficacy (RTW-SE) and mental health symptoms influence the outcomes of work-focused CBT, in terms of RTW and mental health complaints, compared with regular CBT.

Self-efficacy

Self-efficacy refers to the belief that individuals have in their capacity to successfully perform a specific behaviour (Bandura, 1977). Self-efficacy beliefs are considered to have a prominent influence on the initiation and maintenance of behavioral changes (Bandura, 1986). Individuals with high levels of self-efficacy set more challenging goals for themselves, they invest more effort to meet their goals, they persist longer, and are better able to cope with setbacks. In contrast,

individuals may avoid activities for which they experience low self-efficacy. Low self-efficacy cognitions are relatively often present among those with mental health problems, as mental disorders may erode a positive self-concept by the very nature of the disorder (see Corrigan, Watson & Barr, 2006).

This study focuses on self-efficacy with respect to RTW, thereby covering the domain of efficacy cognitions that are relevant for people with mental health problems during their return to work process, including difficulty in concentrating, coping with work pressure, dealing with emotionally demanding situations, and energy regulation. Based on self-efficacy theory (Bandura, 1977, 1986) it can be expected that employees with low RTW-SE are more inclined to postpone their return to work and that they are less successful in their attempts to return to work. RTW-SE indeed appeared to be a robust predictor of actual RTW among sick listed employees with CMD (Lagerveld et al., 2010; Nieuwenhuijsen, Noordik, Van Dijk, & Van der Klink, 2013; Volker, Zijlstra-Vlasveld, Brouwers, Van Lomwel, & Van der Feltz-Cornelis, 2014).

Influence of self-efficacy on treatment success

Studies that have been conducted on the relationship between self-efficacy and the response to psychotherapeutic interventions suggests that treatment outcomes are generally better among those with higher baseline self-efficacy. For instance, in studies exploring the effectiveness of CBT-based treatment of depression (Kavanagh & Wilson, 1986) and panic disorder (Gallagher et al., 2013), treatment outcomes were more favourable for individuals with higher baseline self-efficacy. Similar findings have been found with respect to treatments for fibromyalgia patients (Buckelew et al., 1996). In contrast, Eden and Aviram (1993) found that a reemployment program increased the chance of finding work only for individuals with low levels of general self-efficacy.

In general, the studies that point to higher treatment benefits for those with high self-efficacy are in line with Whisman (1993), who proposes that cognitive therapies capitalize on pre-existing strengths and skills and that individuals with relatively high levels of capabilities and positive learning histories would therefore benefit more from cognitive therapy. Following this reasoning, and based on the studies described above, we expect that especially individuals with high levels of RTW-SE may benefit from W-CBT. As RTW-SE predicts actual return to work among sick listed employees with CMD (e.g., Lagerveld et al., 2010; Nieuwenhuijsen et al., 2013), we assume that individuals with high self-efficacy are better able to do exercises that address (return to) work and to take the necessary steps to (partially) return to work. Having confidence in their ability to deal with challenges and setbacks in the RTW process, these individuals may experience less tension and negative mood during work-focused exercises, they may be more likely to recognize success experiences as such, and may be better able to recover from, and deal with, relapses. All this would eventually help to return to work and to recover from mental health complaints. Based on this reasoning, we formulated the following hypothesis:

Hypothesis 1: Individuals with high baseline levels of RTW-SE benefit more from work-focused CBT, compared with regular CBT, in terms of RTW and mental health outcomes.

Our outcome variables regarding RTW include both partial and full return to work. Our mental health outcomes include symptoms of stress, depression, and anxiety, symptoms that are relevant for common mental disorders in the working population.

Influence of mental health symptoms on treatment success

In general, more severe mental health complaints are predictive of less favourable RTW outcomes (see for a review, Blank et al., 2008). Moreover, several studies have identified symptom severity as a significant predictor for less favourable mental health outcomes of CBT. For instance, CBT for

anxiety disorders has found to be less effective with respect to symptom reduction among those with more severe anxiety symptoms (see Keeley, Storch, Merlo, & Geffken, 2008). In studies on cognitive therapy for depression, severity of depressive symptoms has generally been associated with poorer treatment outcomes (see Whisman, 1993). These outcomes contradict the (common sense) assumption that treatment would be effective to the degree that it addresses individuals' problems and deficits, and would therefore be more beneficial to those with greater symptom severity (see Whisman, 1993).

It can be argued that anxiety complaints (involving fear and worrying) and depressive complaints (involving sadness and hopeless) may interfere with individuals' ability to benefit from CBT techniques (see Keeley et al., 2008; Whisman, 1993). We assume that this would be particularly true for work-focused CBT techniques, whereby individuals are stimulated to focus on work and (partial) return to work. Individuals with high baseline anxiety and depressive complaints generally experience a less favourable RTW process (Blank et al., 2008). Individuals may also fear that early RTW would be hampered by, or may even aggravate, their mental health symptoms (Andersen, Nielsen, & Brinkmann, 2012; Lammerts et al., 2016). Hence, work-focused CBT techniques may be a particular challenge for those with high levels of anxiety and depression. This reasoning leads to the following hypothesis:

Hypothesis 2: Individuals with low baseline levels of depressive symptoms and anxiety benefit more from work-focused CBT, compared with regular CBT, in terms of RTW and mental health outcomes.

METHOD

Participants and procedure

Employees on sick leave (100% absent at the onset of absenteeism and not fully returned to work at the start of treatment) due to CMD were recruited to participate in the study by psychotherapists from an outpatient mental health centre in the Netherlands. CMD encompassed the following diagnoses according to DSM-IV criteria (APA, 1994): Adjustment Disorder, Undifferentiated Somatoform Disorder, Anxiety Disorder (Post-traumatic Stress Disorder was excluded), Mood Disorder (Major Depressive Disorder was excluded). A minority of the participants was categorized as having common mental disorder not further specified or hypochondria.

Using a quasi-experimental design, participants were assigned to either regular cognitive behavioral therapy (R-CBT) or work-focussed CBT (W-CBT). Treatment sessions generally started one week after the first questionnaire was filled in. Follow-up questionnaires were sent at fixed times: one, three, six, nine, and twelve months after baseline.

Of 250 eligible clients, 208 individuals agreed to participate in the study. A total of 168 clients filled in the first questionnaire (response rate 67%). Table 1 presents other baseline characteristics of the sample as well as the duration of the treatment which the participants received. More detailed information about the participants and procedure can be found in Lagerveld et al. (2012).

Table 1. Baseline characteristics of participants and treatment characteristics

	R-CBT (<i>n</i> =79)	W-CBT (<i>n</i> =89)	Total <i>(n</i> =168)
Demographics			
Mean age (SD)	41.3 (10.4)	40.2 (9.6)	40.7 (9.9)
Gender (% female)	67%	54%	60%
Married or cohabiting	67%	86%	77%
Lower vocational/general secondary	37%	37%	37%
education			
Intermediate vocational education	27%	35%	31%
Higher education (college, university)	36%	27%	31%
Disorder			
Adjustment Disorder/Undifferentiated	62%	72%	67%
Somatoform Disorder			
Anxiety	15%	12%	13%
Depression	18%	16%	17%
Other common mental disorder	5%	-	2%

Note. R-CBT= regular cognitive behavioral therapy; W-CBT= work-focused cognitive behavioral therapy;

Interventions

Cognitive Behavioural Therapy (CBT) was performed according to a protocol that is widely used and acknowledged as state-of-the-art treatment for work-related mental health problems in the Netherlands (Keijsers et al., 2000). The protocol generally included 12 sessions.

Work-focused cognitive behavioral therapy (W-CBT) consisted of the regular treatment (CBT) plus a focus on work and the return to work, using a newly developed protocol (Van Schie, Blonk, & Lagerveld, 2005). Typically, therapists used work (and the workplace) as a vehicle or specific context to reach their treatment goals (such as activation, time structure, social contact, regular activity, and increasing self-esteem). The W-CBT protocol generally included 12 sessions. A more detailed description of both interventions can be found in Lagerveld et al. (2012).

Measures

Return to work self-efficacy (RTW-SE). RTW-SE was measured with an 11-item scale developed in an earlier study (Lagerveld et al., 2010). Participants were asked to respond to statements about their jobs, imagining that they would start working their full contract hours the following day, in their present emotional state/state of mind. An example item is: "If I resumed my work fully tomorrow I expect that: I will be able to perform my tasks at work". Response categories varied from 1 ("totally disagree") to 6 ("totally agree") on a 6-point Likert scale. Cronbach's alpha was .93 for the baseline measurement.

Depression and anxiety. Depression and Anxiety were measured using two subscales of the Symptom Checklist-90 (SCL-90; Arrindel & Ettema, 2003; Derogatis, 1977). The subscales depression and (generalized) anxiety consist of 16 items and 10 items, respectively. Participants were asked to what extent they were bothered by symptoms of mental ill-health during the previous week (for example: "Thoughts of ending your life" or "Trembling"). Items were scored on a five-point Likert scale (1 "not at all" to 5 "extremely). The SCL is a validated measure for evaluation of treatment effects and shows good reliability and validity (Arrindel & Ettema, 2003). Both scales were of excellent internal consistency, with alphas above .90. SCL scores were gathered by the therapists at baseline and after approximately three and six months.

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Stress. Stress was measured using the 7-item subscale 'Stress' from the shortened Depression, Anxiety, & Stress Scale (DASS-21; Lovibond & Lovibond, 1995; De Beurs, Van Dyck, Marquenie, Lange, & Blonk, 2001). This subscale measures the extent to which stress has been experienced over the previous week. A sample item is "I had difficulty relaxing". Items were scored on a fivepoint 4-point Likert scale (from '0' not applicable" to 3 "very applicable"). The DASS is a measure with a good reliability and validity (De Beurs et al., 2001). Cronbach's alpha in our study was .92. Stress was measured at every measurement wave, except the second (one month after baseline). *Return to work.* RTW was operationalized in two time-dependent variables. Firstly, partial RTW was defined as the length of time between the first treatment session and the first formal increase in working hours. In the Netherlands, partial RTW is facilitated by law to prevent long-term sickness absences (Gatekeeper Improvement Act of 2002). Secondly, the duration of full RTW was defined as the length of time in calendar days from the start of the treatment until full return to work within one year, as reported by the participants. Full return to work was defined as working the number of hours specified in the labor contract, except if this was still on a 'therapeutic' basis (with adjusted tasks and/or reduced responsibilities).

Statistical analyses

The period until partial and full return to work was analyzed using hierarchical survival analysis (Cox regression). The resulting survival curve shows how many individuals remained absent from work over time. The time lag used in our study was one year. To include participants who had not fully resumed work within this period (n=12), an artificial duration was set at 365 days. Continuous variables were standardized to compute interactions. Post-hoc analyses were conducted using the procedure described by Aiken and West (1991) and by comparing medians for those below and above median scores. In the first step of these analyses, variables that were reported as relevant to baseline differences (marital status and time on waiting list) and drop-out analyses (gender and time on waiting list) were entered when significant (see Lagerveld et al., 2012).

Multilevel analyses, using HLM-6 (Raudenbush, Bryk, & Congdon, 2014), were used to analyse mental health outcomes. Multilevel analysis has advantages with respect to dealing with missing data (Hox, 2010). As Lagerveld et al. (2012) did not find evidence for a three-level structure with respect to individuals' therapist, two levels were discriminated: repeated measurements (first level, varying per outcome measure from three to five measurements, resulting in 504 to 840 occasions) and individuals (second level, n=168 participants). We thereby tested linear and quadratic components in the course of mental health complaints over time. Again, variables that were reported as relevant to baseline differences and drop-out analyses were used as covariates when significant (see above).

RESULTS

Return to Work (RTW) outcomes

Table 2 presents the outcomes of the Cox regression analyses of the duration until partial and full RTW. The main effects of the two interventions on partial and full RTW are elaborated in Lagerveld et al. (2012). The main conclusions from this Table 2, in relation to our hypotheses, are described below.

Hypothesis 1 predicted that individuals with high baseline levels of RTW self-efficacy (RTW-SE) would benefit more from work-focused CBT, compared with regular CBT. We found no significant interaction between baseline RTW-SE and intervention on partial RTW. Participants W-CBT group

had a higher chance of partial RTW (HR = 1.50, p < .05), irrespective of their baseline level of selfefficacy. Hence, Hypothesis 1 was *not* supported for partial return to work.

In line with this hypothesis, we found a significant interaction effect between RTW-SE and the type of intervention on full RTW (HR = 1.56, p < .01). Post-hoc analyses revealed that only among individuals high in RTW-SE, the duration until full RTW differed significantly between the W-CBT group and the R-CBT group (HR = 2.62, p < .01): full return occurred 56 calendar days earlier in the W-CBT group compared to their high self-efficacious counterparts in R-CBT (see median scores Table 3). Moreover, only in the W-CBT group the duration until full RTW differed significantly between those high and low in RTW self-efficacy (HR = 1.80, p < .01): full return occurred 79 calendar days earlier among those with high RTW self-efficacy. Hence, overall, Hypothesis 1 was supported for full return to work.

Hypothesis 2 predicted that individuals with low levels of depressive symptoms and anxiety would benefit more from work-focused CBT, compared with regular CBT. No significant interaction effects on partial and full return were found between intervention and baseline depressive symptoms or anxiety. Hence, Hypothesis 2 was neither supported for partial nor for full RTW. Analyses that were conducted separately for baseline self-efficacy, depressive symptoms and anxiety yielded similar conclusions concerning Hypothesis 1 and 2.

Table 2. Cox regression of duration until partial and full return to work on intervention, baseline RTW self-efficacy, depressive symptoms, and anxiety

		D	uration				Duration	
		until	partial R	TW	until full RTW			
	В	SE	HR	∆Chi²	В	SE	HR	∆Chi ²
Step 1. Main effects				7.84				21.45**
Intervention (1=W-CBT, 0=R-CBT)	.40	.18	1.50*		.55	.18	1.74**	
RTW-SE	.09	.09	1.09		.29	.08	1.34**	
Depression	02	.11	0.98		.11	.10	1.11	
Anxiety	09	.11	0.92		18	.10	0.84	
Step 2. Interaction effects				2.65				10.06*
Intervention*RTW-SE	.13	.18	1.14		.44	.17	1.56**	
Intervention*Depression	22	.23	0.80		08	.21	0.93	
Intervention*Anxiety	.03	.22	1.03		16	.21	0.86	

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

Hazard Ratios (Exp(B) exceeding 1 indicate a positive effect on the occurrence of RTW, while values below 1 indicate a negative effect on the occurrence of RTW.

Table 3. Duration until full return to work (median in days) for high and low RTW-SE (based on median split), for regular and work-focussed CBT

	Low self-efficacy		High self-effi	icacy	Total		
	median	n	median	n	median	n	
Regular CBT	177	38	145	33	165	72	
Work-focused CBT	168	33	89	43	100	77	

Mental health outcomes

Table 4 displays the results of multilevel analyses of mental health outcomes. In general, mental health complaints declined over time, irrespective of the intervention individuals received (for a detailed description of the effects of both interventions see Lagerveld et al., 2012). We found significant random slope variance for a linear time effect in relation to stress, but not for anxiety and depression. For stress, interaction effects involving time could be computed. The main conclusions from our multilevel analyses, in relation to our hypotheses, are described below.

Hypothesis 1 predicted that individuals with high baseline levels of RTW self-efficacy (RTW-SE) would benefit more from work-focused CBT, compared with regular CBT. No significant three-way interactions between intervention, time (linear/quadratic) and baseline self-efficacy were present for the course of stress, anxiety and depression complaints. Hence, Hypothesis 1 was not supported for mental health outcomes.

Hypothesis 2 predicted that individuals with low baseline levels of depressive symptoms and anxiety would benefit more from work-focused CBT, compared with regular CBT. No significant three-way interactions between intervention, time (linear/quadratic) and baseline depression were present for the course of stress and anxiety, and no significant three-way interactions between intervention, time (linear/guadratic) and baseline anxiety complaints were present for the course of stress and depression complaints. Consequently, Hypothesis 2 was not confirmed for mental health outcomes. Analyses that were conducted separately for baseline self-efficacy, depressive symptoms and anxiety yielded similar conclusions with respect to our hypotheses.

Гable	4.	Multilevel	analyses	for	the	course	of	mental	health	complaints	s, with
nterve	entio	on, baseline	RTW self-	effica	acy, d	lepressiv	e sy	mptoms	, and an	xiety as pre	dictors

	Stress	Depression	Anxiety
	В	В	В
Step 1. Main effects			
Time	-3.85*	-13.96*	-5.62*
Time ²	0.64*	2.74*	0.70
Intervention	-0.66	-0.46	0.16
RTW-SE	-0.42	-2.50*	-0.18
Depression	1.50*	-	3.07*
Anxiety	0.19	3.84*	-
Step 2. Two-way Interactions			
Intervention*RTW-SE	-1.08	-0.53	-0.81
Intervention*Depression	-0.88	-	-0.40
Intervention*Anxiety	0.72	-0.99	-
Time*Intervention	0.14		
Time*RTW-SE	0.22		
Time*Depression	-0.31		
Time*Anxiety	0.28		
Step3. Three-way interactions			
Time*Intervention*RTW-SE	-0.49		
Time*Intervention*Depression	-0.22		
Time*Intervention*Anxiety	-0.29		
Variances - model with only 1st lev	el predictors (Time	and Time ²)	
Level 1	11.17	62.07	27.89
Level 2 intercept	11.15*	47.35*	23.95*
Level 2 slope Time	0.93*	-	-
Level 2 slope Time ²	-	-	-
* p <.05.			

DISCUSSION

This study addressed the role of baseline self-efficacy and mental health symptoms on treatment outcomes of two CBT-based interventions for employees who are absent due to common mental disorders. This study builds upon an earlier study in which we compared the effectiveness of two psychotherapeutic interventions: work-focused cognitive behavioral therapy (W-CBT) that integrated work aspects early into the treatment and regular CBT (Lagerveld et al., 2012). The current study examined the influence of baseline differences in work-related self-efficacy (RTW-SE), depressive symptoms, and anxiety on return to work (RTW) and the course of mental health complaints. In a quasi-experimental design, 12-month follow-up data of 168 employees were collected. We expected that individuals with high baseline self-efficacy and low baseline depressive symptoms and anxiety would benefit more from work-focussed CBT, compared with regular CBT.

Influence of baseline self-efficacy on treatment outcomes

The benefits of work-focused CBT, compared with regular CBT, for partial return to work were not dependent upon individuals' baseline level of work-related self-efficacy. However, individuals with high levels of baseline work-related self-efficacy generally benefitted more from work-focussed CBT in terms of full RTW, compared with regular CBT. For individuals with high RTW-SE, full return occurred 56 days earlier (based on median scores) in the W-CBT group compared with the R-CBT group. In the work-focused CBT group, individuals with high levels of RTW-SE also reported a faster return to work compared with individuals with low levels of RTW-SE (i.e., 79 days earlier). For individuals with low levels of self-efficacy, work-focused CBT and regular CBT were equally effective in promoting full return to work.

Regular CBT and work-focussed CBT resulted in a comparable decline of mental health complaints, irrespective of individuals' baseline level of self-efficacy. Hence, only the benefits of W-CBT for full RTW are associated with individuals' baseline level of RTW self-efficacy.

Whisman (1993) proposed that cognitive therapies capitalize on pre-existing strengths and skills and that individuals with relatively high levels of capabilities and positive learning histories would therefore benefit more from cognitive therapy. Our results suggest that this may be particularly true for work-focused CBT, which offers additional challenges to clients by systematically addressing work and return to work. Individuals who possess high levels of RTW-SE may be better able to deal with these challenges, and may in this way challenge dysfunctional cognitions and secure success experiences at work.

Influence of baseline depression and anxiety on treatment outcomes

The effectiveness of work-focused CBT, compared with regular CBT, did not depend on baseline levels of depressive complaints or anxiety. Unlike expected, the positive effects of W-CBT on partial and full return to work were not more prominent among with lower baseline levels depression or anxiety. Furthermore, irrespective of individuals' baseline level of depressive symptoms or anxiety, regular CBT and work-focused CBT resulted in a decline of mental health complaints (see also Lagerveld et al., 2012).

It is important to take into account that more serious disorders, such as Major Depressive Disorder, were not part of our inclusion criteria. It seems then that within the restricted range of Common Mental Disorders included in our study, the severity of the disorder does not influence treatment success with respect to RTW and mental health outcomes. Perhaps, if more serious disorders had been included we would have found comparable results as previous studies which identified symptom severity as a significant predictor for less favourable treatment outcomes (e.g.,

Keeley et al., 2008; Whisman, 1993). However, a study by Hees, De Vries, Koeter, and Schene (2013) did demonstrate favourable effects of work-focused therapy on the course of mental health complaints among employees with a major depression.

Theoretical and practical implications

Our study contributed to the scarce knowledge on RTW interventions for employees who are absent due to common mental disorders, in relation to baseline-self-efficacy and mental health symptoms. This study revealed the influence of baseline self-efficacy on the benefits of work-focused CBT, in comparison with regular CBT, for full return to work. It also showed that baseline depressive symptoms and anxiety had no effect on treatment outcomes. With these results, we hope to have increased our insight into the factors that determine 'what kind of intervention works for whom' (Fonagy, 2010; Nicassio et al., 2004).

Although employees with low baseline self-efficacy did not benefit from W-CBT in terms of full RTW, W-CBT did promote partial return to work and did not hinder the recovery of their mental health problems. Considering the potential benefits of work-focused CBT for partial RTW and the relatively low costs of adding work-related components, we would therefore recommend work-focused CBT for employees with CMD, irrespective of their baseline level of self-efficacy. A focus on (return to) work might also offer psychotherapists a convenient context in which CBT techniques can be applied to achieve regular psychotherapy treatment goals and stimulate RTW. Elevated levels anxiety or depressive complaints at baseline do not seem to hinder the effectiveness of work-focused CBT for individuals with CMD.

To tailor work-focused CBT to low self-efficacious individuals it may be fruitful, however, to add extra exercises or components that may help these individuals prepare for their return to work. This is not to say that RTW issues should not be addressed in an early stage for those with low self-efficacy, but that perhaps extra efforts are needed. Bandura (1991) has proposed several strategies that can be used to enhance self-efficacy, whereby personal mastery is a viewed as the most potent source of self-efficacy. For individuals with low self-efficacy, however, it may be better to start with 'safer' sources of self-efficacy, such as vicarious learning (learning through modelling of successful others), verbal persuasion, and arousal management, before pursuing mastery experiences in the actual work environment (see for instance Ashford, Edmunds, & French, 2010). Furthermore, taking into account the multifactorial nature of the RTW process for employees with CMD (Nieuwenhuijsen, 2004), we would recommend therapists to be particularly alert for obstacles in the work situation (such as a conflict with a supervisor). Perhaps, with the necessary work adjustments, individuals with low-self efficacy are better able to use work-focused CBT to their advantage.

Limitations and suggestions for future research

A limitation of our study is our limited sample size (N = 168). We did find significant interactions in our sample, while moderator effects are generally difficult to identify statistically (McClelland & Judd, 1993; Shadish & Sweeney, 1991). Nevertheless, some effects approached significance, and might have been fully significant with a larger sample size. For future studies, we would recommend to employ larger sample sizes, preferably while using a fully randomized controlled design.

Another limitation concerns the measurement of our mental health variables. Substantial dropout occurred, although this was not selective for most of the variables studied and we used multilevel analyses in order to deal with missing data (Hox, 2010), thereby correcting for variables related to drop-out when significant. Moreover, we did not have the opportunity to measure psychological

well-being in the longer-term and at crucial RTW events (e.g., during increases in work hours). Future research could also pay attention to the (long-term) quality of RTW (e.g., work functioning) and the views of different stakeholders on successful RTW (see also Hees, Nieuwenhuijsen, Koeter, Bültmann, & Schene, 2012; Lagerveld et al., 2012; Wasiak et al., 2007).

Future studies may want to examine how interventions may further be adapted in order to help low-self-efficacious individuals return to work. For instance, future research might incorporate a wider variety of self-efficacy enhancing methods, as described above, such as vicarious learning from peers by using a group setting. In addition, future research might want to assess the realism of clients' efficacy cognitions, for instance by relating self-efficacy to clients' work demands/unfavourable work characteristics or history of (mal)functioning at work before the onset of the mental health problems (Lagerveld, Brenninkmeijer, Blonk, Twisk, & Schaufeli, 2016; Nieuwenhuijsen et al., 2013).

Conclusion

Self-efficacy may not only help us understand and facilitate return to work behaviour, it also predicts who will benefit most from interventions that aim to enhance RTW among employees with common mental disorders. Individuals with high baseline self-efficacy were better able to benefit from work-focused CBT in terms of full return to work. For those with low self-efficacy, perhaps extra exercises or components would be needed to promote full return to work and increase their self-efficacy. Nevertheless, considering the potential benefits of W-CBT for partial RTW, we recommend this intervention as a preferred method for employees with common mental disorders, irrespective of their baseline levels of self-efficacy, depressive complaints, and anxiety. We hope that our results may encourage practitioners to use work-focused CBT as a preferred treatment method for sick-listed employees with CMD, and may inspire both researchers and practitioners to create and adapt interventions in line with clients' individual needs.

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CHAPTER 7

Factors associated with work participation and work functioning in depressed workers: A systematic review



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ABSTRACT

Depression is associated with negative work outcomes such as reduced work participation (WP) (e.g., sick leave duration, work status) and work functioning (WF) (e.g., loss of productivity, work limitations). For the development of evidence-based interventions to improve these work outcomes, factors predicting WP and WF have to be identified.

This paper presents a systematic literature review of studies identifying factors associated with WP and WF of currently depressed workers.

A total of 30 studies were found that addressed factors associated with WP (N = 19) or WF (N = 11). For both outcomes, studies reported most often on the relationship with disorder related factors, whereas personal factors and work-related factors were less frequently addressed. For WP, the following relationships were supported: strong evidence was found for the association between a long duration of the depressive episode and work disability. Moderate evidence was found for the associations between more severe types of depressive disorder, presence of comorbid mental or physical disorders, older age, a history of previous sick leave, and work disability. For WF, severe depressive symptoms were associated with work limitations, and clinical improvement was related to work productivity (moderate evidence). Due to the cross-sectional nature of about half of the studies, only few true prospective associations could be identified.

Our study identifies gaps in knowledge regarding factors predictive of WP and WF in depressed workers and can be used for the design of future research and evidence-based interventions. We recommend undertaking more longitudinal studies to identify modifiable factors predictive of WP and WF, especially work-related and personal factors.

INTRODUCTION

Depression in the workforce

Depression is known to affect many aspects of life, including work [1]. The 12-month prevalence rates of depression in the working population vary between 3.4 and 6.0% for mood disorder in European countries [2, 3] and is 6.4% for major depressive disorder in the United States [4]. Many workers experience negative effects of the depressive disorder on functioning at work [1, 5]. Next to individual suffering, depression-related work problems have high cost implications for employers and society [5, 6]. Adverse consequences of depression on work can be indexed by different work outcome measures, such as presenteeism, productivity loss, decrease in work quality, mistakes and errors, work accidents, sickness absence, disability pensions and unfavourable career perspectives. The different work outcomes can be conceptualized as either addressing "Work Participation" or "Work Functioning".

Impact of depression on work participation

Work participation (WP) has been conceptualized in this paper as the capability and/or opportunity to participate in the workforce, fulfilling one's work role. This includes 'time-based measures' (e.g., time to return to work) and status-based measures (e.g., work status). Participation problems can include serious problems to enter the labour market, short-term work disability such as episodes of absenteeism, long-term or permanent work disability and employment termination such as unemployment or early retirement. Several studies show that WP is substantially affected by depression, but the magnitude and nature of the effects described vary across the work outcome measures used, the study populations and study settings. The effect of depression on WP has been the topic of several large epidemiological studies. Some

of these studies compare the WP of a non-depressed group with a clinically depressed group,

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whereas, other studies relate the level of depressive symptoms of persons in the general population to their level of work participation. Studies in non-clinical populations have, for example, examined the relationship between depressive symptoms and (long-term) sickness absence [7, 8], disability pension award [9], and unemployment [10]. Other studies that compare clinically depressed groups with other non-depressed groups show that depressed workers have more short-term work disability compared to non-depressed workers and, interestingly, compared to workers with a physical condition [11,12]. In addition, depression in workers has been associated with a longer duration of sickness absence compared to non-depressed workers [1, 13]. Lerner and Henke [1] reviewed several clinical, population-based and worksite studies and found that, compared to non-depressed individuals, those with depression have more work absences and more instances of new unemployment. The impact of depression on unemployment has been the topic of various other studies. Cross-sectional population-based studies revealed higher rates of unemployment in depressed groups [14–16]. The assumption that depression is a risk factor for subsequent job loss is substantiated by longitudinal studies in employed primary care patients [11], young workers [10], and aging workers [17]. Finally, some studies indicate that depressed workers have more early retirement [18] compared to workers without depression.

Impact of depression on work functioning

The work functioning of workers suffering from depression is (adversely) affected in various ways [1]. Work functioning refers to the productivity or performance of employees that participate, at least partly, in work, and is the result of a relationship between an individual's health resources and the expectations and structural conditions that operate within social settings such as the workplace [19]. So where work participation differentiates between people 'off work' or 'at work', work functioning is an 'at work measure', distinguishing between individuals that function differently at work. Work functioning has been categorized in this paper as proposed by Amick and Gimeno [20]. They describe two categories of work functioning that can be used to describe the impact of a health condition. The first category deals with the economic consequences of health conditions such as, self-reported loss of productivity at the job [5, 21]. Depression has been associated with such decrements in work productivity [21–23]. The second category quantifies the impact of a health condition on work role functioning by the limitations that workers experience in fulfilling their work tasks. Studies on depressed workers have demonstrated difficulty in meeting mental-interpersonal demands, time management demands, output demands and, in some cases, physical demands [11, 22, 24, 25]. In addition to the reported decrease in work productivity and increase in work limitations, Dewa and Lin [26] demonstrated that workers with depression could only achieve acceptable work functioning with extra effort. Depressed workers reported, on average, 11.6 of these 'extra effort days' in the previous 30 days.

Need for development and evaluation of interventions

Considering the severe consequences of depression, it is important that effective interventions with respect to work functioning and work participation be available. A recent Cochrane review on depressive disorders showed, however, that the evidence for the effectiveness of existing worker directed 'clinical' interventions on work outcomes was limited [27]. Nieuwenhuijsen et al. conclude that it remains unclear whether worker- or work-directed interventions can reduce sickness absence in depressed workers. In this Cochrane review, no studies reporting on workplace interventions were found, and only one study addressed work issues as part of the clinical treatment [28]. Based on these results, it can be concluded that a need exists to develop and evaluate interventions that enhance work functioning and work participation in depressed

workers. This notion is supported by Lerner and Henke [1] who stress the need to develop intervention programs, especially interventions that address workplace issues.

To develop new interventions, it is important to know which factors influence work participation and work functioning. Although the existing literature includes many studies on the relationship between depression and work outcomes, it remains largely unclear which factors might enhance or hinder favourable work outcomes for workers who are currently depressed.

A multidisciplinary expert group including researchers and care providers, identified possible predictive factors of work outcomes departing from the WHO ICF model [29]. This model was selected because it provides broad view on predictors of functioning and participation in work, taking the multidimensional nature of these concepts into account. This broad 'biopsychosocial' perspective might offer new opportunities for interventions as compared to traditional medical models. In accordance to the study of Sanderson [30] who applied the ICF to a population of workers with mental health problems, work functioning and work participation can be situated in the ICF domains 'Activities' (e.g., limitations in work activities or performance) and 'Participation' (e.g., absenteeism). The expert group brainstormed on possible predictive factors for both work outcomes in depressed workers focusing on personal, work-related and disorder-related factors corresponding to the contextual ICF categories person and environment (here work environment), and to the health condition [31]. Modifiable factors mentioned at the personal level concerned e.g., coping/ appraisal, self-efficacy, professional competence and perfectionism. With respect to the work environment, factors such as work demands, workplace culture, social support, job insecurity and decision latitude were mentioned. With respect to disorder-related factors, number of episodes, type of depressive disorder and co-morbidity were highlighted.

To evaluate the impact of these possible predictive factors identified as relevant by the expert group, we have conducted a systematic review of the scientific literature on factors related to WF and WP problems among currently depressed workers. The results will help to provide an evidence-based ground for the development of intervention programs to enhance work functioning and work participation, and will point out gaps in scientific evidence that need to be addressed in future research.

METHODS

Literature search

For WF and WP, two complementary searches were conducted in three literature databases (PsycINFO, PubMed and Scopus). Original studies (in English) were identified that were published from 1995 to 2008. No restrictions with respect to the study design were applied. The search strategies consisted of a depression component (e.g., depressive disorder) and either a WF component (e.g., work productivity, work limitations) or a WP component (e.g., return-to work, disability benefits, absenteeism, turnover, job loss). In "Appendix 1" the search terms are presented. The following eligibility criteria were defined: (1) Studies reported on factors related to WF or WP outcome in depressed workers, (2) Study samples included at least 50% employed participants or provided subgroup (or interaction) analysis for the employed participants, (3) Depression had to be diagnosed by an expert (e.g., following DSM-IV [32] or ICD-10 [33] criteria), or had to be based on a well-defined cut-off score for depressive symptoms of a validated self-report instrument (e.g., BDI [34], HDRS [35], or CES-D [36]. If samples consisted partly of non-depressed workers, only studies that conducted subgroup (or interaction) analysis with depressed workers were included. After the screening of titles and abstracts, inclusion of

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potential relevant studies was evaluated by at least two authors. We excluded studies of bipolar or schizophrenic disorders, those with a sample selection based on physical/somatic complaints, and those including a depressed sample in which all participants had a severe physical/somatic illness such as cancer or multiple sclerosis. Reviews were excluded, but reference lists were inspected for additional studies. If the title and the abstract provided no information about depressed or employed participants, a WF or WP outcome measure or a related factor, we excluded the studies. If the title and the abstract provided insufficient information about the proportion of depressed or employed participants, we retrieved the full publication.

Assessment of methodological quality of included studies

The distinction between cross-sectional and longitudinal studies is the one aspect of methodological quality that was incorporated in our evidence synthesis. However, to increase transparency and accurate documentation, a more elaborate assessment of methodological quality was conducted. No single instrument to assess quality in observational studies can be identified as the gold standard [37, 38]. However, the authors of a recent review of available instruments [38] suggested that such an instrument should cover three fundamental domains: selection of participants, measurement of variables, and control of confounding. The 10-item instrument that was designed for this study covers those three domains along with accurate reporting of main features of study population, data analysis, data presentation, and power (see "Appendix 2" for the full items). The individual items of the checklist were rated by two independent reviewers as either positive (score 1) or negative/unable to determine (score 0). Any difference between the reviewers was discussed until consensus was reached. In accordance with the recommendations by Sanderson et al. [38] we made no summary judgment of low versus high quality.

Evidence synthesis and grouping of work-related outcome measures

For the purpose of synthesizing the results we clustered similar work outcomes. Two different WP outcomes emerged: work disability and termination of employment. Work disability was considered as depression-related inability to work, for a short period (temporarily) or longer periods (even permanently). Outcome measures for work disability included sickness absence or absenteeism, return to work, and disability benefits. Terminating employment was defined as voluntary or involuntary (partly) leaving the workforce, when no health reasons were mentioned. Outcome measures for terminating employment included (early) retirement, job loss or unemployment, quitting and decreasing contract working hours. WF outcomes included work limitations, such as difficulties in meeting certain demands of the job and work productivity (e.g., lost productive time or inefficient days). When both univariate and multivariate analyses were presented, the multivariate results were incorporated in the result tables. When multiple similar work outcome measures were used in one study, the outcome with highest information value was used, i.e., a continuous work disability measure was preferred to a dichotomous work disability measure. Based on Ariens et al. [39], the level of evidence for the association with WP or WF was rated for each factor according to the following grading:

- 1. Strong evidence: consistent findings of at least two longitudinal studies
- Moderate evidence: consistent findings of at least two studies of which only one is a longitudinal study, or consistent findings of at least two longitudinal studies, but one crosssectional study opposing these results.

- 3. Limited evidence, three possibilities: findings of only one longitudinal study, or consistent findings of at least two cross-sectional studies, or two longitudinal studies with consistent findings, but two cross-sectional studies opposing these results.
- Inconclusive evidence: all other findings e.g., opposing findings of at least two studies, findings of only one cross-sectional study or no studies with significant findings available.
 Consistent findings were defined as studies demonstrating significant relationships in the same direction, either positive or negative. Results were considered 'opposing' when both positive and

negative relationships were present at the same time. Studies without significant findings were considered neither consistent nor opposing.

RESULTS

Description of inclusion and exclusion

The electronic literature search resulted in 317 hits for WP and 629 hits for WF that were screened for eligibility. Based on title and abstract, 71 articles were full-text reviewed (53 WP and 18 WF). Of these 71 articles, 41 were excluded for various reasons. Nine articles were reviews. Screening the reference lists of these reviews resulted in two additional WP publications [40, 41]. The main reason for excluding the other 32 publications was that no factors related to WP or WF were presented for a depressed (sub-)group (22 studies). These studies compared, for example, a depressed and a non-depressed group on work outcomes, or the effect of an intervention on work outcomes in a depressed population. Other reasons for exclusion were: no WP outcome was included (3 studies), participants were not employed at baseline or their work status was unclear (4 studies), or the full text was not available (3 studies). In total, 30 studies were selected (19 WP, 11 WF). Because five of these studies addressed both WP and WF, 25 unique publications could be identified, based on data from 10 industrialized countries such as USA, Australia, Canada, and several European countries. In Table 1 an overview of the selected studies can be found. More detailed information about the work outcome, related factors, study population, depression measure, study design, and the main findings of each of these publications is summarized in a data extraction form (Electronic supplementary material).

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Table 1. Overview of studies

	Study ID	Year	Country	n	Population	L/C	Outcome
1	Birnbaum [69]	2003	USA	5295	Non specified group of workers	С	WP
2	Buist-Bouwman [70]	2005	The Netherlands	573	Non specified group of workers	С	WP
3	Dewa [71]	2002	Canada	1521	Workers in finance and insurance	С	WP
4	Dewa [72]	2003	Canada	997	Workers in finance and insurance	L	WP
5	Druss [12]	2000	USA	412	Workers in manufacturing industry	С	WP
6	Kruijshaar [42]	2003	The Netherlands	439	Non specified group of workers	С	WP
7	Laitinen-Krispijn [43]	2000	The Netherlands	233	Non specified group of workers	L	WP
8	Lepine [41]	1997	Belgium, France, Germany, The Netherlands, Spain, UK	13359	Non specified group of workers	С	WP
9	Nieuwenhuijsen [63]	2004	The Netherlands	49	Non specified group of workers	С	WP
10	Rytsälä [73]	2005	Finland	269	Non specified group of workers	С	WP
11	Rytsälä [74]	2007	Finland	186	Non specified group of workers	L	WP
12	Simon [40]	2000	USA	229	Non specified group of workers	L	WP
13	Sorvaniemi [75]	2003	Finland	185	Non specified group of workers	С	WP
14	Souêtre [76]	1997	France	345	Non specified group of workers	С	WP
15	Claassen [77]	2007	USA	2341	Non specified group of workers	С	WP & WF
16	Druss [68]	2001	USA	1200	Non specified group of workers	L	WP & WF
17	Lerner [11]	2004	USA	229	Non specified group of workers	L	WP & WF
18	Sanderson [22]	2007	Australia	49	Workers in call centres	L	WP & WF
19	Stewart [21]	2003	USA	219	Non specified group of workers	С	WF & WF
20	Adler [24]	2006	USA	286	Non specified group of workers	L	WF
21	Endicott [78]	1997	USA	77	Non specified group of workers	С	WF
22	Hawthorne [79]	2003	Australia	390	Non specified group of workers	С	WF
23	Kornstein [80]	2000	USA	390	Non specified group of workers	С	WF
24	Lerner [81]	2004	USA	246	Non specified group of workers	С	WF
25	Michon [82]	2008	The Netherlands	184	Non specified group of workers	L	WF

L = longitudinal; C = cross-sectional; Outcome: WF = work functioning; WP = work participation

Methodological quality of included studies

About half of the studies had a cross-sectional design, while the other half used longitudinal data. All but three studies [21, 22, 42] were deemed to have sufficient statistical power. The mean overall quality score of the studies was fairly high, i.e. 7.9 for WF and 8.2 for WP, with a range from 4 to 10. The complete results of the quality assessment of the included studies can be found in "Appendix 2".

Results from the literature search

The main results of the 30 included studies are reported in the Tables 2, 3, and 4, presenting relationships of personal, work-related, and disorder-related factors with both WP and WF outcomes, respectively. The WP and WF outcomes that are reported in these tables are all stated in a negative direction, e.g., more work limitations, lower work productivity, higher risk for work disability, or longer duration of work disability.

Personal factors

As shown in Table 2, a total of 12 unique studies (10 WP, 2 WF) reported on personal factors. The studies included both WP outcomes (short-term and/or long-term work disability and employment termination). In addition, one WF outcome was addressed (work limitations). Risk factors for increased work disability were older age and previous spells of sick leave (moderate evidence), lower education, low self-esteem, feelings of hopelessness about the future, and low social functioning (all limited evidence). Although gender was frequently studied in relation to work disability, no clear association could be found because of conflicting results. All other relations between personal factors and WP outcomes also remained inconclusive, mostly because of single cross-sectional studies or non-significant findings.

Two studies were identified that reported on WF related to gender and personality traits. Higher neuroticism, more external locus of control, and lower self-esteem were related to more limitations in work functioning (limited evidence). With respect to gender, no conclusive evidence was found because the single study, illustrating greater work limitations in men, used a cross-sectional design.

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 Table 2. Personal factors related to Work Participation (WP) and Work Functioning (WF) of currently depressed workers

Related factor	Outcome	D	Ν	R	Ref nr.	Conclusion
Gender (male)	WP: Work disability	А	233	+	Laitinen [43]	Inconclusive
		А	186	+	Rytsala [74]	
		А	5295	-	Birnbaum [69]	
		А	5295	=	Birnbaum [69]	
		В	1521	+	Dewa [71]	
		В	269	-	Rytsala [58]	
		В	345	=	Souetre [76]	
		В	997	=	Dewa [72]	
	WP: Terminating employment	В	1521	+	Dewa [71]	Inconclusive
	WF: Work limitations	В	390	+	Kornstein [80]	Inconclusive
Age (older)	WP: Work disability	A	186	+	Rytsala [74]	Moderate evidence for
		А	185	+	Sorvaniemi [75]	positive relation
		В	269	+	Rytsala [73]	
		В	1521	+	Dewa [71]	_
		В	412	-	Druss [12]	
		В	997	=	Dewa [72]	
		В	345	=	Souetre [76]	-
	WP: Terminating employment	В	1521	+/-	Dewa [71]	Inconclusive
Education (higher)	WP: Work disability	А	186	-	Rytsala [74]	Limited evidence for
		А	185	=	Sorvaniemi [75]	negative relation
Marital status	WP: Work disability	А	186	=	Rytsala [74]	Inconclusive
History of sick leave	WP: Work disability	В	345	=	Souetre [76]	Moderate evidence for
		А	186	+	Rytsala [74]	positive relation
		В	345	+	Souetre [76]	
Low Self-esteem	WP: Work disability	А	185	+	Sorvaniemi [75]	Limited evidence for positive relation
	WF: Work limitations	А	184	+	Michon [82]	Limited evidence for positive relation
Hopeless about future	WP: Work disability	А	186	+	Rytsala [74]	Limited evidence for positive relation
Low social functioning	WP: Work disability	А	186	+	Rytsala [74]	Limited evidence for positive relation
Higher neuroticism	WF: Work limitations	А	184	+	Michon [82]	Limited evidence for positive relation
More external locus of control	WF: Work limitations	А	184	+	Michon [82]	Limited evidence for positive relation
Alcoholism/substance	WP: Work disability	А	186	=	Rytsala [74]	Inconclusive
abuse	,	В	269	=	Rytsala [73]	
Social adjustment	WP: Work disability	А	186	=	Rytsala [74]	Inconclusive
Social support	WP: Work disability	А	186	=	Rytsala [74]	Inconclusive
Living area	WP: Work disability	В	345	=	Souetre [76]	Inconclusive
Income level	WP: Work disability	В	345	=	Souetre [76]	Inconclusive

D= design of study (A= longitudinal; B= cross-sectional); N= total of participants from the sample fitting the inclusion criteria (depressed & employed) at baseline; R= relationship between factor and outcome ; - A negative relationship between factor & outcome; = No significant positive or negative relations found between factor & outcome; + A positive relationship between factor & outcome; +/- Opposing relations with the outcome are present for different levels of the factor (non linear relation).

Work-related factors

Table 3 shows that seven (6 WP, 1 WF) out of the 30 studies reported on workplace factors. The selected studies included (short-term and/or long-term) work disability and employment termination (in this case a composite measure of termination, retirement or quitting) as WP outcomes, and work limitations as a WF outcome. The work-related factors in these studies included: employment characteristics (hours employed i.e., full-time versus part-time, type of financial reward (i.e., wages versus fees), managerial or non-managerial position, type of company, type of occupation), supervisory behaviour, and previous functioning at work.

Work-related factors studied in relation to WP resulted often in inconclusive evidence because results were provided by single cross-sectional studies or studies without significant results. This is the case for hours employed, type of financial rewards, type of company (i.e., private, administration or self-employed), type of occupation and position. For a few work-related factors linked to the worker or the supervisor, evidence for a relationship with WP could be established. Limited evidence was found that increased work disability is associated with a 'previous low level of functioning at work'. Frequent contact by the supervisor during sick leave increased time until full RTW in the subgroup of depressed workers (limited evidence). However, contact between supervisor and other professionals besides the occupational physician, leads to shorter time to RTW (limited evidence).

The only work-related factor showing an association with WF was type of occupation (i.e., sales, service or support occupations compared to production, construction, repairs, transport occupations), but evidence remained inconclusive as only a single cross-sectional study reported on this relationship.

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 Table 3. Work factors related to Work Participation (WP) and Work Functioning (WF) of currently depressed workers

Related factor	Outcome	D	Ν	R	Ref nr.	Conclusion
Full-time employment	WP: Work disability	В	345	+	Souetre [76]	Inconclusive
Type of financial reward (wages)	WP: Work disability	В	345	+	Souetre [76]	Inconclusive
Type of company	WP: Work disability	B B	345 997	= +/-	Souetre [76] Dewa [72]	Inconclusive
Holding a managerial position	WP: Work disability	A B B	185 345 1521	= + =	Sorvaniemi [75] Souetre [76] Dewa [71]	Inconclusive
	WP: Terminate employment	В	1521	=	Dewa [71]	Inconclusive
Type of occupation (sales, service or support vs. other)	WF: Work limitations	В	246	+	Lerner [81]	Inconclusive
Low level of functioning at work	WP: Work disability	A	186	+	Rytsala [74]	Limited evidence for positive relation
Frequent contact by supervisor	WP: Work disability	A	49	+	Nieuwenhuijsen [63]	Limited evidence for positive relation
Supervisor contacts other professionals besides OP	WP: Work disability	A	49	-	Nieuwenhuijsen [63]	Limited evidencefor negative relation
Supervisor promotes gradual RTW	WP: Work disability	A	49	=	Nieuwenhuijsen [63]	Inconclusive

D= design of study (A= longitudinal; B= cross-sectional); N= total of participants from the sample fitting the inclusion criteria (depressed & employed) at baseline; R= relationship between factor and outcome; - A negative relationship between factor & outcome; = No significant positive or negative relations found between factor & outcome; + A positive relationship between factor & outcome; +/- Opposing relations with the outcome are present for different levels of the factor (non linear relation)

Disorder-related factors

Table 4 shows that 24 studies (17 WP, 7 WF) reported on disorder-related factors. The studies included both WP outcome clusters (short- or long-term work disability and employment termination) and both WF outcomes (work productivity and work limitations). Several disorder-related factors, that might somewhat overlap, were addressed: severity of depressive symptoms, type of the disorder (major depressive disorder (MDD), mild/minor depression, dysthymia), duration of the depression (single episodes, recurrences, chronic depression), clinical history (previous episodes, suicide attempts), clinical improvement of depression (no recovery), and comorbidity (mental and/or physical disorders).

All factors were studied in relation to work disability. Increased work disability was associated with: longer duration of the current episode (strong evidence), MDD (moderate evidence), co-morbid mental or physical disorders (moderate evidence), more severe symptoms (limited evidence), more previous episodes (limited evidence), and less clinical improvement (limited evidence). In line with the results on work disability, less clinical improvement is related to employment termination (limited evidence). Over one-third of the relationships with disorder-

related factors were not significantly related to WP. However, those studies which did find a relationship did so in the expected direction: more symptoms, more severe type of disorder such as MDD, less clinical improvement, and the presence of comorbid disorders were all associated with less WP. One exception is the cross-sectional study of Laitinen-Krispijn [43] which found that in a subgroup of depressed men, those with dysthymia, had a higher risk of work absence compared to those with MDD. In addition, it is interesting to note that higher symptom severity was consistently related to unfavourable WP outcomes in cross-sectional studies, but not in the two longitudinal studies that were found.

With respect to WF, three studies, of which one had a longitudinal design, showed that more severe symptoms were associated with more work limitations in terms of mental-interpersonal demands, output demands, and time management demands, but not with physical demands (moderate evidence). In addition, less clinical improvement was related to increased work limitation (limited evidence). Impaired work productivity was associated with less clinical recovery (moderate evidence), and with MDD (or MDD with dysthymia) when compared to employees with dysthymia only (limited evidence). In general, WF is less studied compared to WP for the disorder-related factors, but as with WP, all relationships were in the expected direction and non-significant results were not often reported.

 Table 4. Disorder factors related to Work Participation (WP) and Work Functioning (WF) of currently depressed workers

Related factor	Outcome	D	Ν	R	Ref nr.	Conclusion
More severe	WP: Work disability	Α	186	=	Rytsala [74]	Limited evidence for
symptoms		Α	185	=	Sorvaniemi [75]	positive relation
		В	997	+	Dewa [72]	
		В	1521	+	Dewa [71]	
		В	269	+	Rytsala [73]	
		В	345	+	Souetre [76]	
	WP:	В	1521	+	Dewa [71]	Inconclusive evidence
	terminate employment					
	WF:	Α	286	+	Adler [24]	Moderate evidence for
	Work limitations	В	246	+	Lerner [81]	positive relation (physical
		В	49	+	Sanderson [22]	demands: =)
	WF:	В	77	+	Endicott [78]	Inconclusive evidence
	work productivity loss	В	49	=	Sanderson [22]	
Туре:	WP: work disability	Α	233	-	Laitinen [43]	Inconclusive evidence
MDD or MDD		Α	229	=	Lerner [11]	
+ Dysthymia (vs		В	219	+	Stewart [21]	
Dysthymia)	WP:	Α	229	=	Lerner [11]	Inconclusive
	Terminate employment					
	WF: Work limitations	В	229	+	Lerner [11]	Inconclusive (physical
						demands & time-
						management demands: =)
	WF:	В	219	+	Stewart [20]	Limited evidence for
	Work productivity loss	В	523*	+	Hawthorne [79]	positive relation
Type: Severe/	WP: Work disability	Α	49	+	Sanderson [21]	Moderate evidence for
MDD		В	269	+	Rytsala [73]	positive relation
(vs. minor/mild/		В	439*	=	Kruijshaar [42]	
moderate)		В	13359*	+	Lepine [41]	
Type: Moderate	WP: Work disability	В	439*	+	Kruijshaar [42]	Inconclusive evidence
(vs mild)						

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Longer duration of	WP: Work disability	Α	1200	+	Druss [68]	Strong evidence for
depression		Α	186	+	Rytsala [74]	positive relation
		Α	185	=	Sorvaniemi	
					[75]	
		Α	49	=	Sanderson [22]	
History: prior	WP: Work disability	В	2341	+	Claassen [77]	Inconclusive evidence
suicide attempts	WF:	В	2341	+	Claassen [77]	Inconclusive Evidence
	Work productivity loss					
History:	WP: Work disability	Α	186	=	Rytsala [74]	Limited evidence for
Existing/more		В	345	+	Souetre [76]	positive relation
previous Episodes		В	269	+	Rytsala [73]	
		В	439*	=	Kruijshaar [42]	
Co-morbidity:	WP: Work disability	Α	185	+	Sorvaniemi [75]	Moderate evidence for
physical or mental		Α	186	=	Rytsala [74]	positive relation
condition						
		В	573*	+	Buist [70]	
		В	412	+	Druss [12]	
		В	269	+	Rytsala [73]	
		В	219	+	Stewart [21]	
		В	997	=	Dewa [72]	
		В	269	=	Rytsala [73]	
		В	345	=	Souetre [76]	
Less clinical	WP: Work disability	Α	229	+	Simon [40]	Limited evidence for
improvement/		Α	49	=	Sanderson [22]	positive relation
(Less or no	WP: Terminate	Α	229	+	Simon [40]	Limited evidence for
recovery)	employment					positive relation
	WF: Work limitations	Α	286	+	Adler [24]	Limited Evidence for
						positive relation
	WF:	Α	1200	+	Druss [68]	Moderate evidence for
	Work productivity loss	В	219	+	Stewart [21]	positive relation

MDD= Major Depressive Disorder; D= design of study (A= longitudinal; B= cross-sectional); N= total of participants from the sample fitting the inclusion criteria (depressed & employed) at baseline; *= exact number of workers within baseline depressed population is unclear, but above 50%. N of Depressed group is presented; R= relationship between factor and outcome; - A negative relationship between factor & outcome; = No significant positive or negative relations found between factor & outcome; + A positive relationship between factor & outcome

DISCUSSION

This systematic literature review on personal, work-related and disorder-related factors associated with work participation (WP) or work functioning (WF) among depressed workers identified 30 studies. The results show that disorder- related factors were studied most often, followed by personal factors and work-related factors. Our study identifies several gaps in knowledge regarding factors related to WP and WF problems in depressed workers and provides valuable information needed to design future research. In particular, modifiable work-related and personal factors should be addressed in further research. The presented overview of factors related to WF and WP in depressed workers may also be useful for various stakeholders and professionals wanting to develop occupational health interventions for this population.

Summary of review findings

With respect to WP, the following relationships were supported by the literature. Strong evidence was found for the association between a long duration of depression and more (short-term and/or

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long-term) work disability. Moderate evidence was obtained for a relationship between more severe types of depressive disorders, presence of co-morbid mental or physical disorders, older age, history of previous sick leave, and work disability. Limited evidence was found to support a relationship between increased work disability, and low education, low self-esteem, feelings of hopelessness, low social functioning, impaired previous work functioning, supervisory behaviour, severe depressive symptoms, previous depressive episodes, and little clinical improvement. Other participation outcome measures, such as unfavourable career perspectives, were studied less often. We found limited evidence for an association between less clinical recovery and termination of employment.

Regarding WF, moderate evidence was found for more severe symptoms to be associated with more work limitations, and for less clinical improvement of depression to be related to decreased work productivity. Although limited to strong evidence could be established for some associations, many other relationships yielded inconclusive evidence, often due to a lack of longitudinal studies, hindering the identification of prospective relationships. In addition to the inconclusive evidence, a complete absence of studies (either cross-sectional or longitudinal) was observed for many possible combinations between potential predictors and work outcomes. For example, the type of financial reward was studied in relation to work disability, but not to other WP measures or any of the WF outcomes. This gap in the literature was predominantly present with respect to work-related factors, WF outcomes and certain WP outcomes, such as negative career perspectives.

Comparison and contrast with other mental and somatic health disorders

No other systematic review describing predictors of work functioning or work participation in workers with other mental disorders could be identified. The same holds for predictors of work functioning among workers with somatic health disorders. However, a review of factors predictive of work participation in workers with chronic somatic disorders by Detaille et al. [44] revealed some similarities with findings from our review. In this review, factors predictive of work disability in somatic disorders included more severe health complaints (corresponding to more severe depression in our study), older age and sickness absence. In contrast to our findings, female gender was consistently shown to be related to unfavourable work participation. Another review reported factors affecting work participation for people absent from work due to mental health problems. Contrary to our review the authors included also mental health problems other than depression, non-working groups (e.g., recently unemployed or students) and samples selected because of a physical health problem [45]. In line with our results this review shows that studies have produced opposing results in some cases, particularly in the case of demographic factors.

Strengths

To our knowledge, this is the first review on factors related to WP and WF in depressed workers. While Lerner and Henke [1] describe thoroughly the consequences of depression in terms of productivity and absence, this review aims to identify factors that can be used for the development of future interventions to prevent or reduce negative consequences of depression on work outcomes. In the level of evidence synthesis, and similar to the method used by Franche and colleagues [46], we transparently weighted the quality of the study based on the research design (cross-sectional versus longitudinal). This strategy addresses the limitation of cross-sectional research to draw conclusions about prospective relationships, without ignoring a substantial part of the available evidence in this field that is characterized by a limited number of relevant studies. In addition, no arbitrary cut-off scores for low versus high quality studies were used in line with the recommendations by Sanderson [38].

This review describes a broad range of work outcomes including both work participation and work functioning in a sensitive and comprehensive literature search using multiple databases. Despite the fact that WP and WF form a continuum, they seem to be artificially separated in most existing literature. Indeed, only 5 of the 30 studies selected in this review described WP and WF outcomes simultaneously.

It should also be noted that the review was conducted by a multidisciplinary team, including researchers from different institutes, with different training and different cultural backgrounds. Combining these perspectives has contributed to the development of a comprehensive view on the related concepts of WP and WF.

Methodological considerations

In the literature search we gathered data representing determinants of WP and WF in the specific target population of depressed workers. This demarcated search deliberately ignored the literature that addresses determinants for the onset of depression and determinants of work outcomes among depressed but non-working individuals (such as re-employment) or in a non-depressed worker population (such as absenteeism among workers with burnout). However, these studies may provide evidence from which ideas can be derived for the development of new occupational health interventions.

Another limitation concerns the definition and categorization of the work outcomes. To date, no gold standard or commonly accepted definition for the concepts of WP and WF exist. Based on other definitions, our outcome measures could have been categorized differently, possibly yielding different results. With regards to work disability, several indicators of sickness absence have been aggregated in this review. Research shows that even though many absence outcomes overlap, differences were found with respect to certain prognostic factors or outcomes of interventions [47, 48]. For example, the frequency of absence might tell something about the need for recovery, while the duration of absence might be more related to ill health [49]. A comprehensive explanation for these differences cannot yet be given. To our knowledge, the overlap between WP and WF measures has not yet been studied within a population of depressed workers. We believe that the transparent categorization we used resulted in a comprehensive and clear view on WP and WF.

Some methodological problems have been encountered. First, the studies were designed differently which hinders the aggregation of findings. The difference between cross-sectional and longitudinal designs has been transparently addressed through the weighting of the levels of evidence. We have been cautious not to interpret the established associations as prognostic relationships, but refer to them as 'related' or 'associated' factors. Only in cases of strong evidence, i.e., based on at least two longitudinal studies, we conclude that a predictive relation is present. Another important issue concerns the aggregation of results from studies partly based on univariate analyses and partly based on multivariate analyses. It can be assumed that studies using univariate models may find significant relationships for certain factors that might become non-significant in multivariate models. In our evidence synthesis, however, the results of these two types of analysis were combined. It becomes even more complicated when we take into account that the design of multivariate models and the selection for confounder control are often not well described and subject to different approaches.

With respect to the external validity of the studies, it must be noted that all studies were conducted in western industrialized countries, limiting generalization to other cultures and social security contexts. The relationships for which limited evidence was found were often based on studies from one country. As many countries differ with respect to their social security systems

[49], the applicability of findings will vary for various contexts, as highlighted in the evidencebased medicine approach [50]. For example, European research on predictors or associated factors of return to work among employees with either physical or mental health problems shows that the impact of work characteristics differs in European countries [49]. It is encouraging, however, that the relationship supported with moderate to strong evidence in our review often stemmed from different countries.

Implications and recommendations for practice

The presented overview of factors may be useful for professionals to develop occupational health interventions for depressed workers. Some of the factors identified as possible predictors (such as the severity of the disorder, self-esteem and supervisory behaviour) are modifiable within a clinical or work setting. The severity of the disorder may be improved when evidence-based (guideline-concordant) clinical care is available and implemented [51–53]. Unfortunately, this is not realized in all westernized countries [54]. In this paper, several indices of the severity of mood disorders were considered as related factors. The strongest level of evidence relating mood disorders to the outcomes of interest was for the relationship between duration of depression and work participation. This suggests that while the severity of symptoms/disorder is of importance, what may be driving the impact of depression on work participation might be the duration of the episode. The longer an episode of mood disorder, the longer a person is away from the social network of work and from work goals and activities. Over time, this erodes job attachment. considered to be a critical element of the worker-workplace relationship to the return-to-work process. These findings also have practical implications. Many available interventions are targeting, and successfully reducing, depressive symptom severity. However, it appears to be equally important to reduce the duration of the mood disorder episodes. Several strategies can be considered (1) Improve knowledge of health providers about diagnosis of depression: In many countries, there is a notable underdiagnosis of depression in primary care patients [55-59] and absence of diagnosis will delay obtaining treatment and prolong episode duration. (2) Improve access to appropriate psychiatric care and reduce delays in treatment delivery: Among those with a depression diagnosis, treatment provision has been shown to be inadequate [54–60], which can, of course, also prolong duration of depressive episode, (3) Increase general awareness about depression: Workers may delay seeking treatment due to lack of knowledge about depression or due to social stigma [61, 62]. Increasing their knowledge about the significance of their own symptoms, and fostering more tolerance in society about disclosure of depression may lead to speedier access to treatment, and reduce episode duration. (4) Facilitate access to treatment through workplace channels: Making it easier for the worker to disclose depression and access treatment via workplace channels may impact on speed of diagnosis and treatment delivery.

Besides intervening on the severity of the disorder, our findings suggest that personal factors like self-esteem and self-efficacy, and work-related factors like supervisory behaviour could receive extra attention when designing interventions. Cognitions about the self-concept can be changed in a clinical setting and in the workplace. In the workplace, a supervisor could provide positive feedback to enhance self-esteem. Self-efficacy could be stimulated by adapting work tasks in such a way that work-related success experiences are guaranteed; and supervisors could be instructed to contact other health professionals besides the occupational physician when workers experience a clinical depression [63].

A recent Cochrane review [27] showed that the evidence for the effectiveness of existing clinical worker-directed interventions to improve work outcomes is limited. Moreover, no studies on

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work-directed interventions were identified. Therefore, it would be interesting to explore the impact of intervening on both personal and work-related factors to enhance work outcomes.

Recommendations for future research

Only a few factors, which had been identified a priori by occupational health experts, were actually present in scientific literature [31]. With respect to personal factors, modifiable concepts such as cognitions (e.g., perceived competence, self-efficacy and perfectionism) and skills (e.g., coping and problem solving) could be considered in future research. Future prognostic and intervention studies also should pay more attention to work-related factors. In the development of interventions, it is advisable to focus on modifiable factors such as work demands (e.g., work pressure, mental or emotional demands), work resources (e.g., financial rewards, social support, autonomy, security), types of tasks (e.g., working with clients/customers versus administrative work), physical workplace characteristics (e.g., day light), workplace culture (e.g., supervisory behaviour, leadership style, organizational justice), and availability of work. Of these work-related factors, supervisory behaviour might be a promising factor, because we found some evidence for a relationship with work participation. Studies of sick-listed workers with physical disorders have shown a relationship between supportive supervisory behaviour and work disability. For example, early contact between the supervisor and worker, and contact by a healthcare provider with the workplace can prevent work disability [46]. However, within a subgroup of workers with adjustment disorders, frequent contact by the supervisor during sick leave increased time until full RTW in the subgroup of depressed workers [63]. As our finding regarding supervisory behaviour for depressed workers is based on one single study, we recommend a replication of this study. Work-related factors such as high job stress and reorganizational stress have been associated with work disability among sick-listed workers with poor mental health in general [45], and could therefore also be addressed.

With respect to the outcome measures, several recommendations can be made for future research. In all, more attention should be paid to WP outcomes besides work disability, such as early retirement. Either from the WP or the WF perspective, the career development of depressed workers might be a topic of interest [64], using for example decreased promotion prospects or turnover to lower functions as outcome measures. Moreover, when the body of literature in this field increases, future reviews or meta-analyses might consider using more detailed categorizations of work outcomes. Broadening and differentiating the work outcomes, taking the complexity and developmental nature of these concepts into account, might improve our understanding and might contribute to better interventions. For instance, future studies could differentiate between short-term (temporal) and long-term (permanent) disability [65, 66] or address different stages in the return to work process [67]. Future studies could integrate both types of work outcomes in their longitudinal research designs, ideally in a multicentre study with participation from multiple countries. Such designs may contribute to a better conceptualization of WP and WF from an international perspective and to the identification of common predictive factors for both outcomes in depressed workers. Longitudinal studies that combine WP and WF may be of additional value because they may provide better insight in the relative impact of depression on both work outcomes [22, 68], the relative or combined impact of WP and WF on depression-related costs for employers [68], or in the mechanisms explaining the adverse depression outcomes over time [11, 22]. In addition, future studies on the effectiveness of occupational health interventions should incorporate both WF and WP to provide a comprehensive evaluation.

Conclusion

This review provides support for several associations between personal, work-related or disorderrelated factors, and work outcomes. With respect to work participation, moderate to strong evidence was found for an association between a long duration of the depressive episode, more severe types of depressive disorders, presence of co-morbid mental or physical disorders, older age, history of previous sick leave, and the outcome of work disability. With regards to work functioning, more severe depressive symptoms were associated with more work limitations, and less clinical improvement was related to a reduction of work productivity (moderate evidence). The results of this literature overview can be used to develop new evidence based interventions. We recommend conducting more longitudinal, multicentre studies to identify predictive factors of WP and WF in depressed workers. In particular, studies should focus on modifiable personal and work-related factors and should address a broader variety of WP outcomes, e.g., change of jobs and career perspectives. In addition, WF and especially work productivity, should be studied more often.

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CHAPTER 7 | REVIEW DEPRESSED WORKERS.

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CHAPTER 8

GENERAL DISCUSSION





INTRODUCTION

This dissertation aims to generate knowledge about the role of self-efficacy in the RTW process and about interventions that promote RTW for workers with common mental disorders (CMD). CMD such as depression, anxiety and adjustment disorder are highly prevalent and constitute a major cause of (long-term) sick leave. Considering the negative consequences of long-term sick leave for the individuals concerned, their employers and society, it is important that effective RTW interventions are implemented for these workers. Thus far, a handful of studies investigated the effectiveness of interventions for workers with CMD on RTW. However, the evidence about effective interventions and their mechanisms of change is still limited, especially with respect to interventions in mental health care (MHC) (Nieuwenhuijsen et al., 2008; Arends et al., 2012; Bhui, Dinos, Stansfeld, & White, 2012). This dissertation adds to the literature by providing knowledge about the effects of a work-focused MHC intervention and insight in self-efficacy as a psychological mechanism of change.

Insight in modifiable predictors is important for the design of interventions that promote RTW (Michie, Johnston, Francis, Hardeman, & Eccles, 2008). However, previous studies have paid little attention to the impact of interventions on such predictors, resulting in a limited understanding of mechanisms of change in RTW. Considering the multifactorial nature of RTW, effective interventions should aim at several predictors of RTW: disorder, person and work-related factors. This dissertation has paid special attention to the role of self-efficacy as a 'person related factor' in the RTW process.

According to Self-efficacy Theory, enhancement of self-efficacy is an essential mechanism of change (Maddux & Lewis, 2005; Bandura, 1986). People with a high RTW self-efficacy (RTW-SE) feel confident about their abilities to return to the workplace and perform their job successfully after a period of sick leave. Based on theoretical models for RTW and research among sick listed workers with other health complaints, we expected that higher RTW-SE promotes earlier RTW for workers with CMD. Self-efficacy is a particularly interesting concept for intervention studies, because unlike other factors that predict RTW (e.g. age) it can be influenced. Self-efficacy is one of the few theoretical concepts for which evidence-based intervention techniques are available (Michie et al., 2008). Insight in the role of RTW-SE may therefore contribute to the refinement of the theoretical basis for effective RTW interventions.

Because of the limited impact of regular MHC on RTW we aimed to improve a MHC intervention in a way that it promoted not only symptom recovery but also work-related outcomes (RTW and RTW-SE). There are some indications outside the field of MHC that dual-focused interventions, which address both the disorder and workplace issues, are most effective with respect to RTW (van der Klink, Blonk, Schene & van Dijk, 2003; Blonk, Brenninkmeijer, Lagerveld, & Houtman, 2006). Therefore, we developed and evaluated a dual-focused MHC intervention provided by psychotherapists: work-focused cognitive behavioral therapy (W-CBT). W-CBT uses work as an early and integral part of clinical treatment, following a graded exposure perspective in order to enhance RTW-SE. We expected that, compared to regular CBT, W-CBT would be more effective in promoting RTW and that this effect could partly be explained by improved RTW-SE.

This final chapter first describes our main findings for the research questions that were presented in the first chapter. Two key issues emerged from these main research findings that we will reflect upon in greater detail afterwards:

- The role of self-efficacy in the RTW process. We will reflect on the course of RTW self-efficacy (RTW-SE) during the RTW process, the predictive value of self-efficacy change for RTW, and the added value of the RTW-SE questionnaire.
- 2) The effectiveness of Work-focused Cognitive Behavioral Therapy (W-CBT). Firstly, we will reflect on the effects of W-CBT on RTW and symptom recovery. Secondly, we describe explanations for the effectiveness of W-CBT. Thirdly, we will describe the effectiveness of W-CBT for different subgroups. Finally, we will discuss opportunities for a broader implentation of W-CBT, for example to workers with more severe depressive complaints.

Per theme, these reflections include an analysis and explanation of our main findings, methodological considerations, suggestions for further research, and implications for practice.

SUMMARY OF MAIN FINDINGS

Role of self-efficacy in the RTW process

How can RTW-SE be measured in the valid and reliable way?

To capture self-efficacy during the RTW process, we developed a self-report questionnaire that measures RTW self-efficacy (RTW-SE). We concluded that this scale measures RTW-SE during the RTW process in a valid and reliable way. The construct validity of the questionnaire could be supported because RTW-SE related to other concepts in line with theoretical expectations. For instance, factor analysis showed that RTW-SE could be distinguished from general self-efficacy and depressive symptoms. Futhermore, the 11-item RTW-SE scale could be easily administered across a variety of occupational settings in different stages of the RTW process.

How does RTW-SE change over time during the RTW process?

Self-efficacy growth until full RTW was characterized by a curvelinear shape, with the most prominent growth in the first months of the treatment. In addition, descriptive analysis indicated that this growth generally followed a wave-like pattern. Such fluctuations did not obstruct a timely full RTW. Furthermore, self-efficacy growth started somewhat delayed for people who returned to work later in the process. Descriptive results suggested that full RTW was preceded by self-efficacy growth until a certain threshold level on the RTW-SE scale was achieved (a score varying between 3.8 and 4.5).

Are baseline RTW-SE and increases of RTW-SE predictive of faster RTW?

In line with our expectations, both initial self-efficacy level and self-efficacy growth before full RTW predicted faster full RTW, over and above the impact of disorder related factors. Furthermore, the predictive value of self-efficacy growth for RTW was demonstrated both for individuals with either high or low baseline self-efficacy levels.

Effectiveness of W-CBT

What are the effects of W-CBT on RTW and symptoms of CMD for employees with CMD?

In line with our expectations, W-CBT promoted a faster full and partial RTW (65 and 12 days earlier, respectively), compared to CBT. A significant decrease in mental health problems was equally present in both W-CBT and regular CBT. Furthermore, W-CBT resulted in substantial financial savings for the employer. These were estimated at 5,275 US Dollars per employee based on wages paid to sick listed employees. Both W-CBT and CBT resulted in similar proportions of workers back at work, but the employees who received W-CBT achieved full RTW earlier. In addition, the RTW process of employees receiving W-CBT was characterized by more and consequently smaller RTW-steps.

Can the effects of W-CBT on RTW be explained by changes in self-efficacy over time?

Contrary to our expectations, the curvelinear and wave-like growth pattern of RTW-SE was equal in both treatments. As self-efficacy growth did not differ between treatments, we tentatively conclude that self-efficacy does not serve as a mediator to explain the effectiveness of W-CBT. Future studies that measure RTW-SE more frequently within the first months of treatment and at critical RTW steps, may possibly reveal a mediating role of RTW-SE.

What subgroups benefit most from W-CBT? (Differential effectiveness)

CBT promoted RTW most effectively for employees with higher initial levels of self-efficacy. High selfefficacious employees who received W-CBT returned to work faster (i.e., 56 days earlier) compared to their high self-efficacious counterparts who received CBT. For lower self-efficacious employees W-CBT resulted in faster partial RTW but not in faster full RTW, compared to regular CBT. The effectiveness of W-CBT on RTW was not influenced by the severity of baseline mental health problems. Moreover, W-CBT did not obstruct symptom recovery, even for low efficacious employees or those with more severe symptoms at baseline. What factors should be addressed in interventions that aim to promote work outcomes for (major) depressed workers?

Major depression is considered a more disabling type of CMD compared to adjustment disorder and is strongly related to long-term sick leave. In our effectiveness trial we did include patients with minor depression, but those with major depression were excluded. In order to explore whether W-CBT or other forms of work-focused MHC may also be beneficial to workers with more severe depressive symptoms than those included in our effectiveness trial, we conducted a literature review. In this systematic review we examined which disorder, person and work-related factors are associated with work functioning and with work participation in workers with (major) depression. For work functioning, more severe depressive symptoms were associated with more work limitations, and clinical improvement was related to higher work productivity. Factors that were associated with decreased work participation were; a longer duration of the depressive episode, more severe types of depressive disorder, presence of co-morbid mental or physical disorders, older age, and a history of previous sick leave.

REFLECTIONS THEME 1: THE ROLE OF SELF-EFFICACY IN THE RTW PROCESS

Characteristics of RTW-SE change during the RTW process

Concerning the change of RTW-SE over time three aspects were notable as noted above. First, self-efficacy levels before full RTW increased curvelinearly indicating the most prominent growth in the first months of the treatment. Because RTW-SE growth precedes full RTW, changes in RTW-SE may be viewed as an indicator of RTW progress. Secondly, this growth was characterized by minor wavelike fluctuations in the majority of the employees. This means that most employees experienced minor 'relapses' in their selfefficacy during the RTW process, but that such relapses were not of a permanent nature. As these fluctuations in RTW-SE did not obstruct a timely full RTW, they do not have to be interpreted as an indicator of a stagnating RTW process. These findings may reassure both care providers and employees as fluctuations in self-efficacy seem part of a normal RTW trajectory. Such fluctuations may reflect the trial and error learning process that occurs while returning to work. Thirdly, the increase of self-efficacy appeared to start somewhat delayed for people who achieved full RTW later in the process. Possibly, employees need to reach a certain level of self-efficacy before they are ready for behavior change consisting of actual full RTW. When self-efficacy growth is delayed and certain 'threshold' levels of selfefficacy are not reached, our data suggest that (timely) full RTW is less likely to occur. A closer look at the data suggested that a RTW-SE score between 3.8 and 4.5 may be a necessary threshold for full RTW to occur. Therefore, a 'threshold theory' for self-efficacy seems an interesting venue for future research. Future studies could identify optimal cut-off scores in larger samples in order to facilitate the identification of high-risk cases, monitor RTW-readiness, and offer a better RTW prognosis.

Because of the frequent measurement of RTW-SE we were able to describe self-efficacy changes over time in a detailed manner. This has improved our understanding of the psychological process that occurs during RTW process which may be valuable to both care providers and researchers.

Recommendations for practice

Because self-efficacy change during the RTW process shows wavelike fluctuations, a care provider may support and prepare the employee to deal with such minor relapses in self-efficacy, using the principles of stress inoculation training (Meichenbaum, 1985)

Predictive value of RTW-SE on faster RTW

Knowledge about the predictive value of RTW-SE growth can reveal the benefit of interventions that enhance RTW-SE. Our results showed that both initial self-efficacy level and self-efficacy increase predict faster RTW. Further, RTW-SE growth predicted RTW both for employees with high or low pre-intervention self-efficacy levels alike. This suggests that in order to achieve a faster RTW for workers with CMD, a focus

on cognitions regarding RTW is important. Possibly those with low self-efficacy were more focused on their symptoms, and felt reluctant about (partially) returning to work before they were recovered from their symptoms. A lack of effort to modify such cognitions in RTW guidance may lead to unnecessary long sick leave spells. Hence, enhancing RTW-SE appears a fruitful intervention strategy to promote RTW, irrespective of initial self-efficacy levels. CBT-therapists may be a preferred professional group to deliver interventions that aim to increase RTW-SE because they are specialists in changing cognitions. A description of how RTW self-efficacy may be enhanced can be found in chapter 4.

The impact of self-efficacy (growth) on RTW was demonstrated over and above the impact of disorder related factors, such as the severity of depressive symptoms. Self-efficacy beliefs may be a better predictor of RTW compared to mental health symptoms because self-efficacy is an overarching construct that relates better to the multifactorial nature of RTW. In RTW-SE expectations, workers on sick leave may take into account not only their mental health symptoms, but also the work context. In contrast with many previous studies, a few recent Dutch studies including our own (see chapter 2 and 6) even showed that mental health indicators were not predictive for RTW for workers with CMD (Volker, Vlasveld, Brouwers, van Lomwel, van der Feltz-Cornelis, 2015). Possibly the effect of CMD symptoms in these studies was overruled by other factors such as RTW-SE. In addition, the diminishing predictive value of symptoms on RTW may be an indicator that work resumption despite of symptoms is becoming more common in the Dutch practice. The predictive value of RTW-SE for RTW underlines the importance of including self-efficacy in theorizing, intervention development, and research focused on RTW for workers with CMD. We would recommend. for example, to use theoretical models for RTW that specifically include self-efficacy such as the Attitude-Social influence-Self-efficacy model (ASE-model) (van Oostrom, 2010).

Because of its predictive value, the concept of RTW-SE may be helpful for several stakeholders in deciding the best time for RTW. Thus far, clinical guidelines are not available to support this decision. However, as RTW-SE is an overarching concept reflecting beliefs concerning several factors related to RTW, the use of RTW-SE may facilitate to determine RTW readiness. Both RTW-SE level at the start of treatment and changes over time may be used for this decision in dialogue with the employee. As such, the RTW-SE scale may be used to monitor RTW-SE levels and to develop tailored intervention strategies. Finally, the RTW-SE scores may also be used to motivate employees to take subsequent steps in their RTW process. Addressing such motivational aspects is considered essential for employees who hesitate to return to work because of their CMD symptoms (van Oostrom, 2010). In that sense, the RTW-SE scale may be a vehicle to implement CBT-based strategies, and discuss RTW cognitions.

Recommendations for practice

We would recommend occupational or mental health care professionals to use the RTW-SE scale:

- To determine an optimal moment for RTW in dialogue with the employee. When selfefficacy levels increase and/or approach scores around four on this scale, this may indicate readiness for a next step towards full RTW. When RTW-SE growth stagnates before this threshold, additional efforts to facilitate RTW and self-efficacy growth should be considered.
- To facilitate tailored RTW strategies and improve self-efficacy. For example, low scores on single items of RTW-SE may be used to discuss solutions for specific hindering elements such as 'dealing with emotions at work' or 'energy regulation at work'.
- To motivate employees to take subsequent steps in their RTW-process. For example by the use of 'scaling' questions used in Motivational Interviewing (Resnicow, & McMaster, 2012). In such scaling questions people would for example be asked 'Why did you not score lower on the RTW-SE scale?'.

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Generalization of the findings on the role of RTW-SE

Currently, the RTW-SE scale is being translated and validated for use in other countries such as Brasil, Norway, Finland and Japan (Silva-Junior, Griep, Lagerveld, & Fischer, in press; Heikinheimo, Tuisku, Luukkonen, & Lagerveld, submitted; Gjengedal, 2016). Preliminary results confirm the predictive value of baseline RTW-SE in Finland and Norway. In addition, other Dutch studies have confirmed the predictive value of baseline RTW-SE, over and above other relevant predictors, in populations with varying sick leave durations (Nieuwenhuijsen, Noordik, van Dijk, & van der Klink, 2013). Therefore, it seems likely that baseline RTW-SE is a valuable predictor of RTW in a variety of contexts.

The predictive value of self-efficacy change on RTW and detailed patterns of self-efficacy growth have not been researched before and should be confirmed in other settings. Self-efficacy might develop differently over time among other groups of employees. For example, self-efficacy may increase less for employees without clinical treatment. These employees could experience less symptom reduction which they might need for self-efficacy increases to occur (see Nieuwenhuijsen et al., 2013). Another interesting venue for future research would be to monitor RTW-SE in contexts where partial RTW is not common, because those without partial RTW have fewer opportunities to test (and adapt) their self-efficacy in real working live. Future studies may also want to capture self-efficacy change within the earlier phases of sickness absence. Participants in our trial were on average 9 weeks on sick leave before the first self-efficacy measurement and almost 40% had started to return to work partially before baseline measurement. Hence, we could not assess self-efficacy change during the course of the entire RTW process.

Concluding comments about the role of self-efficacy in the RTW process

To conclude, this dissertation shows that RTW self-efficacy (RTW-SE) plays a crucial role in the RTW process for workers with CMD. Because self-efficacy grows to a certain threshold level before full RTW occurs, RTW-SE is an important intermediate outcome that can be used to monitor RTW-progress. Moreover, this is the first study that shows that self-efficacy growth predicts faster full RTW, irrespective of initial self-efficacy levels. Hence, both theoretical models of RTW and intervention providers could pay attention to this concept in order to allow for enhanced (predictions of) RTW, and tailored RTW advice.

REFLECTIONS THEME 2: EFFECTS AND GENERALIZABILITY OF W-CBT

Effects of W-CBT on RTW and symptoms of CMD

W-CBT appeared to promote a faster full and partial RTW, compared to regular CBT, without negative side effects on the recovery of CMD symptoms over the course of one year. The financial savings for the employer in case of W-CBT were estimated at 5,275 US Dollars per employee. Hence, integrating work-related aspects with CBT seems to be a fruitful approach with benefits for employees, employers, and care providers. We concluded that the impact of MHC on RTW can be substantially improved when a dual-focused intervention such as W-CBT is used within a regular MHC setting. As psychotherapists can play an important role in the RTW process, we believe that RTW should be an important focus in MHC. This dissertation has provided psychotherapists with an evidence-based and practical tool (the W-CBT intervention protocol) to achieve both state of the art symptom reduction and RTW. By using W-CBT psychotherapists contribute in a broader sense to the quality of life of their patients, addressing both their treatment and vocational needs.

In the introduction we argued that the multifactorial nature of RTW requires attuned efforts from a variety of stakeholders, including MHC. MHC professionals have a rather distal relation to the workplace. For instance, they are not trained with a specific focus on the workplace, and their financers (e.g. health care insurance) usually do not pay them to achieve RTW but to promote symptom reduction. It has has been suggested that professionals with such a distal relation to the workplace (e.g., as social workers, GP's and psychotherapists) are less effective in delivering RTW interventions (Brouwers, Tiemens, Terluin, & Verhaak, 2006; Bakker et al., 2007). The current study is the first that contradicts this idea, by showing that psychotherapists can speed up full RTW with 65 days when they integrate work elements early into their clinical treatment.

The more distal relation of the psychotherapist to the work situation may even have advantages. Because psychotherapists do not serve company interests, (partial) RTW will be more easily framed in terms of benefits for the clients' recovery. In this way, trust, the confidential therapeutic alliance and the therapists' authority are more easily secured. This may facilitate the intrinsic motivation of employees for RTW and a more in-depth analysis of what hinders and facilitates RTW resulting in optimally tailored RTW solutions. People may feel less comfortable with such a treating role from other professionals such as occupational physicians (Vlasveld, 2012). Furthermore, the therapeutic conditions in psychotherapy, including available treatment time, may have supported employees to actually implement RTW solutions in practice (see van Beurden, 2016; van Oostrom, 2010). Research has shown that proposed RTW solutions are not always implemented, especially when this requires behavioural changes from the employee (Noordik, Nieuwenhuijsen, Varekamp, van der Klink, & van Dijk, 2011). To motivate employees for such behavioural changes the expertise of psychotherapists may be valuable. In their regular clinical work psychotherapists often manage to motivate their clients to conduct behaviour they resist because this is part of the pathway to recovery. Possibly the behavioural change qualities of a psychotherapist and the therapeutic conditions are crucial for optimally tailoring and implementing RTW solutions.

When psychotherapists want to target behavioural change techniques effectively to the work context, it is essential that they have insight in workplace aspects. Therefore, using aspects from the W-CBT protocol that enlarge this insight, such as the 'work anamnesis', seems important. Discussing work aspects with the therapist may facilitate creative and tailored RTW solutions as therapists can combine their clinical expertise with information about the workplace. Thus, despite of their distal relation to the workplace psychotherapists may arrange for tailored work adjustments via the sick listed worker which in itself may function as an in vitro exposure.

In addition, it would be interesting to know whether other types of evidence-based psychotherapy would benefit from a dual focus. For instance, future studies could examine the effects of work-focused problem solving therapy on RTW for workers with CMD. A recent Cochrane review cautiously concludes that the effects of problem solving interventions on RTW out-favour the effects of CBT-based interventions for employees with adjustment disorder (Arends et al., 2012). Possibly, actively working on 'the change of cognitions' is less needed for those with adjustment disorder as opposed to those with depression or anxiety (Nieuwenhuijsen, Verbeek, de Boer, Blonk, & van Dijk, 2010). However, caution is required here because results from non work-focused CBT and work-focused CBT were aggregated in this review. This may well have influenced the conclusion about the effectiveness of CBT on RTW. Because this dissertation also shows the importance of addressing RTW cognitions to improve RTW chances, cognitive behavioural techniques may be an important route to facilitate RTW.

We must note that the results of our studies were obtained with a quasi-experimental design. The consequential potential biases should be kept in mind when attributing the effects on RTW to differences in the treatment. Chapter 3 describes, however, several aspects that make the influence of unobserved variables less plausible and contribute to the validity of our findings. To confirm the effectiveness of W-CBT future studies preferably consist of a RCT including a waiting list control group. Future research may also want clarify whether W-CBT issued by psychotherapists is the most cost-effective solution, compared with less intensive support from an occupational physician or a general practitioner for example. Within such studies, we recommend differentiating between employees with adjustment disorder and those with more severe CMD (anxiety and depression) (see Rebergen, 2009; Nieuwenhuijsen, et al., 2010).

Recommendations for practice

We recommend psychotherapist to use their behaviour change skills and CBT-techniques to:

- Motivate their clients for (partial) RTW before they fully recovered from their CMD symptoms.
- Create tailored gradual RTW-plans and support their clients to implement these plans.
- Modify unhelpful low self-efficacy.
- In order to achieve these goals the therapist should gain insight in workplace aspects, for example by using the 'work anamnesis' from W-CBT.

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What subgroups benefit most from W-CBT? (Differential effectiveness)

For a further implementation of W-CBT it is important that therapists are convinced about its effectiveness also for specific subgroups. We differentiated subgroups based on the baseline self-efficacy levels and the severity of CMD-symptoms. For these subgroups we researched the impact of W-CBT on (full and partial) RTW and symptom reduction. Only for the outcome measure of full RTW did we find a subgroup effect, which was related to baseline self-efficacy. W-CBT promoted full RTW most effectively for employees with higher initial levels of self-efficacy. As such, high self-efficacious employees that received W-CBT returned to work faster than their high self-efficacious counterparts that received regular CBT. For low self-efficacious employees W-CBT resulted in faster partial RTW but not in faster full RTW, compared to regular CBT. Future research should therefore clarify how and to what extent RTW-SE and full RTW may be enhanced for this subgroup.

A legitimate concern of the therapists involved in our trial was the occurrence of negative side effects of W-CBT on symptom development, especially among clients with more severe symptoms. The effectiveness of W-CBT on symptom reduction was not dependent on severity of baseline mental health problems or self-efficacy. Hence, W-CBT did not obstruct symptom recovery, even for low efficacious employees or those with more severe symptoms at the start of treatment. In similar vein, the effectiveness of W-CBT on RTW was not dependent on severity of baseline mental health problems either. These results may contribute to the acceptance of W-CBT among psychotherapists and their clients, and facilitate a less symptom contingent approach in the RTW process for workers with CMD.

We therefore conclude that all MHC clients with CMD benefit to some extent from W-CBT in their RTW process, irrespective of their initial symptom severity or self-efficacy levels. Because high baseline RTW-SE is already a robust predictor of full RTW, the fact that W-CBT managed to achieve an additional effect on full RTW within this subgroup, clearly demonstrates the added value of W-CBT.

Adjusting W-CBT for low self-efficacious employees

Employees with relatively low self-efficacy benefited less from W-CBT in terms of full RTW, which might argue for adjustment of the existing W-CBT protocol for this group. As self-efficacy growth predicted full RTW, also for employees with low self-efficacy, the effectiveness of W-CBT may be enhanced by increasing their level of RTW-SE. W-CBT stimulated self-efficacy mainly by securing mastery experiences due to a gradual RTW. Depending on the clients' situation, the first steps in this gradual approach could consist of a variety of actions, like 'talking about work' or 'working with the necessary work adjustments'. For those with the lowest levels of self-efficacy, their self-efficacy may not have passed a threshold needed to experiment with such adjustments in a real working situation.

To increase self-efficacy in low self-efficacious individuals it may be more effective to pay more attention to 'safer' sources of self-efficacy, such as vicarious learning, verbal persuasion, and arousal management, before pursuing mastery experiences in the actual work environment.

When trying to improve low self-efficacy, intervention providers have to be sensitive to the realism of these cognitions. Low efficacy cognitions may be indicative of work characteristics that do not adequately match the actual capacities of the employee (Nieuwenhuijsen et al., 2013). Trying to improve *realistic* low efficacy cognitions may be harmful. When people are persuaded to reach for goals far beyond their current abilities, there is a higher risk on failure. This risk may be minimized by adequately applying general strategies to promote self-efficacy and investigate the realism of low RTW-SE. In case of a realistic mismatch, additional efforts may be needed to facilitate RTW.

Future research should focus on the characteristics of the group with low RTW-SE and examine what additional efforts this specific group needs to facilitate full RTW. However, future intervention developers should be alert not to offer an overprotective version of W-CBT to these clients, whereby discussing (return to) work is postponed. Both care providers and employers tend to be cautious with stimulating (partial) RTW in the case of CMD (van Oostrom, 2010; Lammerts, Schaafsma, van Mechelen, Anema, 2016a; Oomens, Huijs, & Blonk, 2009a & 2009b). This cautiousness may increase (self)stigmatization of workers with CMD, and may eventually reduce RTW chances (Roelen et al., 2012; Marrone, & Golowka, 2000). To contribute to a debate and break through such cautiousness Marrone & Golowka (2000) described why

people with mental health problems should be stimulated to work: "If you think work makes people with mental illness sick, try unemployment, poverty and social isolation".

Recommendations for practice:

We recommend that for employees with low (baseline) self-efficacy

- 1) Safer sources of self-efficacy receive more attention in W-CBT.
 - To facilitate vicarious learning one might think of group treatment, or providing case descriptions of successful peers.
 - Verbal persuasion may be shaped by more attention for specific positive feedback from the intervention provider (i.e. compliments that emphasize the usefulness of the employees' competencies for RTW (Van Ryn, & Vinokur, 1992).
 - Arousal management may for example be achieved by giving more attention to relaxation exercises when thinking of (return to) work-related stressors.
 - Finally, mastery experiences regarding RTW behaviour may be more facilitated within the therapeutic setting, for example via roleplay with the therapist.
- 2) The realism of low self-efficacy is investigated.
 - For example by checking a history of malfunctioning at work, the clarity of job requirements, or gather information on work characteristics from other sources.
 - In case of a realistic mismatch, additional efforts may be needed with respect to work adjustments, access to MHC, additional professional training, or permanent job changes.

Explanations for the effectiveness of W-CBT

Explanative value of RTW-SE changes on the effectiveness of W-CBT

Because W-CBT aimed to improve mastery and RTW-SE by a graded exposure approach, we expected that the effectiveness of W-CBT on RTW would be mediated by improved RTW-SE. Contrary to our expectations, we could not demonstrate that W-CBT enhanced RTW-SE to a greater extent than CBT. Therefore, we tentatively conclude that self-efficacy cannot serve as a mediator that explains the higher effectiveness of W-CBT. In chapter 4 several explanations for this finding are described related to both theory and study design. Based on Social Cognitive Theory (Bandura, 1986) we expected that work-focused intervention techniques would show a surplus in effect on RTW-SE, because these techniques targeted a specific outcome behaviour (RTW). However, the specific work-related CBT strategies were not superior in enhancing RTW-SE compared to state of the art CBT strategies.

Future research could investigate whether a mediating role of RTW-SE can be established within another research design. Future studies could also benefit from using more frequent measurements, for example by measuring RTW-SE at critical RTW events (e.g., when an employee increases work hours). In addition, measuring RTW-SE more often in the first months of therapy may reveal a difference between the treatments, as our data suggest that the effect of W-CBT on RTW-SE was more pronounced in the first months. Finally, it is possible that W-CBT did result in more RTW-SE increases compared to CBT only for people with high baseline RTW-SE. We mentioned before that the effect of W-CBT on RTW was most pronounced for employees with high baseline self-efficacy. Similarly, the surplus in effect of W-CBT on RTW-SE may be more visible in the group of high self-efficacious employees. Future studies could test the existence of such subgroup effects on the development of self-efficacy.

Other explanations for the effectiveness of W-CBT

Considering the profound effects of W-CBT on RTW, it would be valuable to unravel the effective components of W-CBT and use these for future RTW interventions. This is especially important as interventions that use a dual-focused and 'graded activity' approach appear to be effective in some studies (e.g., Blonk et al., 2006; van der Klink et al., 2003; Schene, Koeter, Kikkert, Swinkels, & Mc Crone, 2007), but not in others (e.g., Noordik, van Dijk, Nieuwenhuijsen, & van der Klink, 2009; Brouwers et al., 2006; Bakker et al., 2007). We expected that self-efficacy would be the most powerful mediator as this is an overarching concept that reflects a client's perception of personal, disorder, and work factors. However, it is possible that focusing on one mediator on the level of 'personal factors' (such as self-efficacy) may be an oversimplification that does not fit the complex, multifactorial nature of RTW and the integral features of W-CBT.

Because we compared two treatments that differed only with respect to the work focus, it is plausible that changes in work aspects mediated the effectiveness of W-CBT on RTW. Although we have not tested other mediators empirically, we have some indications that W-CBT was more effective with respect to RTW because of the quality and actual implementation of gradual RTW-plans, embedded in a context where symptoms were adequately treated and where self-efficacy was enhanced. The quality of a RTW-plan will depend on the degree of its tailoring to the clients' work and personal situation. As described above, the therapeutic conditions and behavioural change expertise from the psychotherapist, may have allowed for an in-depth analysis of hindering and promoting factors for RTW, resulting in better tailored plans, and adequate support to actually implement them (see van Oostrom, 2010). With respect to promoting the implementation of gradual RTW, our data support this idea as employees in W-CBT used more (and consequently smaller) steps in their RTW process. Hence, the results of our trial underline the importance of graded RTW. In addition, the quality of graded RTW-plans may be dependent on the 'degree of gradation' (Noordik et al., 2009). The graded RTW stimulated by the therapists of W-CBT may have promoted full RTW, because they were able to balance gradual steps (achievable goals) with the necessary learning experiences (challenging goals). Furthermore, the timing of an intervention that promotes gradual RTW may influence its effectiveness. A balance needs to be found between not intervening too early (e.g., to reduce risks of medicalization, or worsening of symptoms) and not too late (to reduce the threshold for RTW and prevent worsening of symptoms). In line with the recommendations from Roelen et al. (2012) most employees in our sample were referred to MHC on time (within 2-3 months) which allows for optimal impact of the graded RTW-plans from W-CBT on RTW chances. Based on the aforementioned quality indicators, optimal RTW plans require many balanced and creative solutions from professionals in dialogue with their clients. The journey to RTW requires a timely and sensitive approach from the care provider, in a way that the employee is enabled to bring positive efficacy cognitions and abilities in to practice at work, with an appreciation of the limitations that are part of CMD (see Marone & Golowka, 2000).

Concluding comments on explanations for the effectiveness of W-CBT

To conclude, RTW-SE could not be established as a mediator explaining the effectiveness of W-CBT within the current research design. In this section we have speculated that the effectiveness of W-CBT instead may be attributed to the quality and actual implementation of the gradual RTW plans. Based on our results and the comparison with existing literature on RTW interventions, we recommend that future interventions continue to use a graded RTW approach. Such graded RTW plans should be optimally tailored to the client's personal and work situation. This requires many creative solutions from the intervention provider, as opposed to 'a default strategy of sending people back to work for a few hours'. The intervention provider should have adequate resources (e.g. time, skills, type of confidential relation) to tailor these plans in dialogue with the employee, motivate the employee to implement the solutions, and balance these plans with respect to challenging and achievable goals.

We suggest that future studies measure the (perceived) quality and actual implementation of workplace adjustments during W-CBT or other dual focused interventions. In addition, future research could sharpen our insight in the role of partial RTW (as a component of W-CBT) for achieving full RTW and self-efficacy growth. Preferably, such research compares treatments that either allow for partial RTW or not.

Generalization of the effectiveness of W-CBT

Applicability in other socio-legal contexts

It is relevant to realize that the results of W-CBT were obtained in the Dutch context (see appendix 2). This context gives employees by law the opportunity for partial RTW (or other workplace adjustments) and to return to their previous job within 2 years. In addition, efforts from both the employee and employer to strive for optimal RTW are required by law and supported by an occupational physician starting in the first weeks of absenteeism. Moreover, access to high quality MHC is in general well arranged in the Netherlands, in contrast to some other countries. Hence, a further implementation of W-CBT in the Dutch (occupational) health care setting seems feasible.

It is important to investigate the effectiveness of W-CBT in other socio-legal contexts, for example with fewer responsibilities for the employer or opportunities for partial RTW. W-CBT arranged workplace adjustments via the sick listed worker, without direct involvement from the employer. In countries where employers are less obliged to facilitate the RTW process such a loose involvement of the employer might result in less adequate workplace adjustments, which may hamper successful RTW. However, direct involvement of a supervisor in a RTW intervention for employees with CMD does not guarantee successful RTW either (van Oostrom, 2010; De Weerd, van Dijk, van der Linden, Roelen, & Verbraak, 2016).

After we published the results of this trial in 2012, a few studies from other countries have also revealed advantages of dual focused (psychological) care on RTW (Reme, Grasdal, Løvvik, Lie, Øverland, 2015; Wåhlin, Ekberg, Persson, Bernfort, & Öberg, 2012; Kröger et al., 2015; Lerner et al., 2012). For example, a Norwegian RCT reported favourable effects of work-focused CBT on work participation among people with CMD, including employees on sick leave (Reme et al., 2015). Although partial RTW is possible in Norway, it is far less common as it requires certification by the employees' general practitioner. In addition, Norwegian employers have fewer incentives to facilitate (partial) RTW, compared with The Netherlands (Roelen et al., 2012). The promising results of dual-focused MHC interventions for workers with CMD outside the Netherlands suggest that W-CBT may also be implemented in other socio-legal contexts.

Applicability for those with (major) depression

The aforementioned conclusions about the effectiveness of W-CBT cannot be generalized to employees with major depression without caution. Considering the prevalence of (major) depression and its impact on work outcomes, it is however important that effective RTW interventions for this group are developed and tested as well. Based on the systematic review we presented in chapter 7, the importance of early access to high quality MHC is stressed for sustainable RTW among depressed workers. In order to facilitate work outcomes, such treatment in particular should focus on reducing the duration of the disorder and lowering the severity of depressive (and co-morbid) symptoms. Although research shows that recovery of depressive symptoms does not automatically lead to RTW, adequate treatment of these symptoms is possibly a more important condition for RTW in the case of major depression compared to other CMD (Rebergen, 2009). This emphasizes the role of a MHC specialist as a key stakeholder to facilitate the RTW process for these employees. Therefore, it may be even more important to know whether the impact of W-CBT, or similar dual-focused treatments, can be confirmed for employees with (major) depression.

A few studies that have been published after we started our intervention study indeed show that interventions for depressed workers that address both symptom recovery and work aspects are more effective than clinical interventions alone (Kröger et al., 2015; Lerner et al., 2012; Hees , de Vries, Koeter, & Schene, 2013; Schene et al., 2007; Nieuwenhuijsen et al., 2008). For example, preliminary findings from a German matched controlled study reveal encouraging results of W-CBT on RTW for major depressed workers on sick leave (Kröger et al., 2015). W-CBT used in that study showed many similarities with the W-CBT used in our trial. In addition, Lerner and colleagues (2012) describe the effects of a brief telephonic work-focused CBT-based program. They conducted a RCT among depressed (dysthymia and/or major depression) employees who reported productivity losses at work. The results showed that work outcomes (better at work performance, less work absences, less productivity loss) improved significantly in the work-focused treatment group compared to usual care.

We can conclude that for depressed workers access to adequate MHC seems an important condition to promote sustainable RTW and that work-focused CBT-based interventions show encouraging results. Future research may investigate whether W-CBT as used in our trial needs adaptation to fit the needs of major depressed workers and improve RTW.

Applicability for those without a workplace to return to

The OECD has pointed to the relevance of developing effective RTW interventions especially for the unemployed with CMD (OECD, 2012). Offering a graded RTW process to this group is more complicated as they have 'no workplace to return to'. This issue may be resolved by offering individual job support in order to facilitate workplace adaptations or identification of appropriate employment.

Indeed, a Norwegian study showed that work participation was substantially increased among long-term benefits when such job support was offered in addition to W-CBT (Reme et al., 2016). Preliminary results of a similar approach, offered to homeless American unemployed people with social anxiety, showed that this approach enhanced job search activity and self-efficacy within the first three months (Himle et al., 2014). On the other hand, another study that offered both MHC and vocational services to people with CMD without a job, did not lead to RTW. The authors suggest that this result may in part be explained by the consecutive nature of the support from each professional involved, instead of a more integrated approach (Lammerts, Schaafsma, Bonefaas-Groenewoud, van Mechelen, & Anema, 2016b).

Hence, when work-focused MHC is offered to those that have no workplace to return to, it may be considered to offer 'individual job services' as an integrated part of MHC. This may be relevant for the unemployed, those on long-term health benefits, and workers that cannot or do not want to return to their pre sick leave job. Currently, the Dutch Social Security Agency and a MHC organization (Reiner van Arkel) conduct a pilot study in which such integral care is stimulated for unemployed people who receive specialised work-focused MHC.

Concluding comments about the effectiveness and generalizability of W-CBT

To conclude, we advise to offer W-CBT to all MHC clients on sick leave with CMD because W-CBT promotes RTW and state of the art symptom recovery, even for the more severe cases. The naturalistic nature of our trial and the Dutch legal context that allows for partial RTW, would suggest that it is feasible to implement W-CBT in the current Dutch MHC practice at relatively low cost. As recent studies from other countries show promising results of dual-focused MHC interventions for workers with CMD, W-CBT may also be implemented in other legal contexts.

The robustness and generalization of our conclusions may be enhanced when future international studies confirm the effectiveness of W-CBT in a randomized controlled trial. Furthermore, we recommend to develop and evaluate an extended version of the W-CBT protocol that promotes full RTW also for employees with low initial self-efficacy and for individuals with major depression. Main theoretic challenges regarding W-CBT are to unravel mediating factors or effective intervention elements, such as the quality and actual implementation of graded RTW-plans.

GENERAL CONCLUSION

This dissertation is the first to show that increased return to work self-efficacy (RTW-SE) predicts faster full return to work (RTW) for employees with common mental disorders (CMD). Furthermore, our results show that work-focused cognitive behavioural therapy (W-CBT) offered by psychotherapists is a (cost) effective method to promote faster RTW, without negative side effects on recovery of CMD symptoms.

Because of the positive effects of W-CBT on RTW we recommend to offer this intervention to employees on sick leave due to CMD such as adjustment disorder, anxiety or minor depression. There are indications from other studies that dual focused interventions may also be successfully offered to individuals with major depression, or those without a job. W-CBT could be adapted and evaluated for such other groups. This is especially recommended for employees with low initial self-efficacy scores, as they did not benefit from W-

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CBT in terms of full RTW. Finding ways to further enhance RTW self-efficacy may be a fruitful approach as self-efficacy growth predicts faster full RTW, even for low self-efficacious employees.

Considering the predictive value of RTW-SE on RTW we recommend that theoretic models and future interventions include a focus on promoting RTW-self-efficacy, in addition to disorder and work-related factors. Contrary to our expectations, RTW-SE change could not explain the effectiveness of W-CBT. Although enhancing RTW-SE is important for RTW, W-CBT must have affected other factors that further enhanced RTW chances. Within W-CBT, the behavior change qualities of the psychotherapist and other therapeutic conditions may have stimulated optimal creation and implementation of tailored gradual RTW plans. The improvement with respect to self-efficacy and symptomology from general CBT techniques may, however, have formed an important base for employees to benefit from changes in work factors.

The concept of RTW-SE may be valuable to monitor the RTW process, offer a better RTW prognosis, tailor RTW plans, and motivate employees for a next RTW step. We developed and validated an 11-item questionnaire to measure RTW-SE that is feasible to use for these purposes in a variety of occupational settings.

To conclude, this dissertation has provided valuable insights in the RTW process that may be used to enhance the effectiveness of RTW interventions for workers with CMD. We hope that the findings and practical tools from this dissertation will facilitate bridges between work and care systems and contribute to a broader implementation of a work focus within MHC. Such a broader implementation may fulfill clients' treatment and vocational needs simultaneously and reduce the negative consequences of longterm sick leave for all stakeholders concerned.
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SUMMARY

SUMMARY.

The objective of this dissertation is to improve the understanding of the role of self-efficacy in the return to work (RTW) process of employees with common mental disorders (CMD) and interventions that promote RTW for these workers. Below a summary is provided per chapter of this dissertation.

Chapter 1 outlines the main concepts and provides an overall introduction to explain the relevance of improving (psychological) interventions that promote RTW for employees with CMD. CMD such as depression, anxiety and adjustment disorder are highly prevalent and a major cause of (long-term) sick leave, thereby imposing negative consequences to workers, employers and society. It is therefore important that effective RTW interventions are implemented.

Several studies have researched the effectiveness of RTW interventions for workers with CMD. However, the evidence about what interventions are effective is still limited, especially with respect to mental health care (MHC) interventions. A substantial proportion of workers with CMD receive care from a MHC specialist, who generally do not integrate work aspects into the treatment they provide. However, earlier studies have shown that interventions outside MHC were more effective with respect to RTW when they combined clinical and work-related strategies. The current dissertation therefore evaluates a MHC intervention (work-focused cognitive behavioral therapy, W-CBT) that systematically integrates work aspects into clinical treatment. In addition, few RTW intervention studies have addressed mechanisms of change that may contribute to the refinement of the theoretical basis for effective RTW interventions. Therefore, special attention will be given to the role of work-related self-efficacy during the RTW process. Work-related selfefficacy is defined in this thesis as the confidence employees have in their abilities to return to the workplace and perform their job successfully.

Chapter 2 is centered on the research question '*How can RTW-SE be measured in a valid and reliable way?*' As no measures were available for self-efficacy in the context of RTW for employees with CMD we developed a new questionnaire. The development and validation of this 11-item self-report questionnaire is presented in this chapter. This instrument covers self-efficacy cognitions that are relevant for RTW of people with CMD, including difficulty in concentrating, coping with work pressure, setting one's personal boundaries, dealing with emotionally demanding situations, and energy regulation.

Three Dutch samples of sick-listed employees with mixed mental and physical health problems were used to validate the 11-item instrument (N= 2214). These employees were between 9-20 weeks on sick leave at baseline and 69% experienced clinical levels of CMD based on either DSM-IV criteria (diagnosis by a clinical therapist) or cut-off scores on validated questionnaires for burnout or depression. The factor structure and internal consistency could be tested within the whole sample. Correlations with other constructs could be researched in part of the sample (varying per construct between n= 88 and n= 1931). Insight in the sensitivity to change (3 and 6 months after baseline) was available for 175 MHC clients. The test re-test reliability was measured for 65 employees 2 weeks after baseline. Finally, the predictive validity of RTW-SE for RTW after three months could be tested among 245 respondents.

The questionnaire was of excellent internal reliability, had adequate test-retest reliability and proved to be responsive to changes over time. Based on the factor structure and reliability results, RTW-SE was conceptualised as a unitary construct. The associations with general self-efficacy, locus of control, coping, physical workload and mental health problems supported the construct validity of this scale. Depressive symptoms and RTW self-efficacy were related, but also clearly different constructs. This was reflected in the separate factor structures of these concepts, but also with

respect to different predictive values for RTW three months after measuring RTW-SE. In addition to the encouraging psychometric properties this scale was easily administered within the target population across a variety of occupational settings. This makes the RTW-SE scale a potentially valuable tool for research, in clinical practice, and occupational health care settings.

Chapter 3 answers a key research question from this dissertation: 'What are the effects of Workfocused Cognitive Behavioural Therapy (W-CBT) on RTW and symptoms of CMD?'. W-CBT integrated work issues in an early phase into the treatment and used work as a context to reach regular treatment goals. The W-CBT protocol aimed to support an effective RTW process by securing and enhancing mastery experiences with respect to RTW. The work elements that were integrated in regular CBT consisted mainly of 1) work-focused psycho-education, 2) a workanamnesis, 3) drawing a tailored and graded RTW plan including ways to deal with setbacks 4) evaluating the RTW progress, and 5) using work as a context for other relevant CBT strategies.

In a quasi-experimental design among 168 employees on sick leave with CMD, the effects of W-CBT (n=89) on return to work (RTW) and mental health problems were compared with regular CBT (n=79) within a period of 12 months. Employees who received W-CBT returned to the workplace earlier: full and partial RTW occurred 65 and 12 days earlier, respectively, compared to the CBT group. This resulted in a saving of costs for the company of about 5,275 US Dollars per employee. The proportion of participants that had fully returned to work within one year did, however, not differ between treatment groups (over 90% in both groups). In addition, participants in the W-CBT group used more (and consequently smaller) steps to reach full RTW compared to those in the regular CBT group. Finally, temporal relapses (or wave-like fluctuations) in the RTW process occurred more often in W-CBT (16% vs. 8%), but this difference was not statistically significant. A significant decrease in mental health problems was equally present in both treatment conditions. These results show that through focusing more and earlier on work-related aspects and RTW, functional recovery in work can be substantially speeded up within a regular psychotherapeutic setting. This result was achieved without negative side effects on psychological complaints over the course of one year. These results should preferably be confirmed in a future study that uses a randomized controlled design with a longer follow-up period.

Chapter 4 answers two research questions regarding the role of self-efficacy in the RTW process. Firstly: '*How does self-efficacy change over time during the RTW process?*". RTW self-efficacy was measured 5 times within 9 months among the employees of the sample described before (n=168). All measurements before the occurrence of full RTW were used to calculate individual growth parameters (lineair and quadratic). Multilevel analysis revealed that self-efficacy growth was characterized by a curvilinear shape. In addition, explorative descriptive analysis indicated that this growth followed a generally wave-like pattern, which was somewhat delayed for people that returned to work later in the process. Furthermore, these descriptive results suggested that a self-efficacy level between 3.8 and 4.5 (on scale from 1-6) seems a necessary threshold for full RTW to occur.

Secondly, this chapter describes self-efficacy as a possible mechanism of change in the RTW process: "*Can the effects of W-CBT on RTW be explained by changes in self-efficacy over time?*". More insight in the mechanism of change of effective interventions such as W-CBT can contribute to the refinement of the theoretical base for RTW interventions in other settings. We therefore tested whether W-CBT resulted in stronger increases of RTW self-efficacy compared to regular CBT. Contrary to our expectations multilevel analysis showed that the curvilinear growth pattern of RTW-SE was equal in both treatments. Visual inspection of these growth curves suggested that

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RTW-SE growth was more pronounced in the first months of treatment among W-CBT clients. This trend could not be supported statistically. Furthermore, descriptive results indicated that the patterns of self-efficacy (e.g., wave like fluctuations) did not differ between treatments either. As self-efficacy growth did not differ between treatments, we tentatively conclude that self-efficacy cannot serve as a mediator to explain the effectiveness of W-CBT. Future research may possibly conclude differently when self-efficacy is measured more frequently within the first months of treatment.

Chapter 5 focuses on the predictive role that self-efficacy plays in the RTW process: "Are baseline self-efficacy and self-efficacy increases predictive of faster RTW?". Although we could not demonstrate the mediating role of self-efficacy in the effectiveness of W-CBT, enhancing RTW-SE may still be an effective strategy to promote RTW. Earlier studies have shown that pre-intervention levels of self-efficacy predict return to work (RTW) and hypothesize that promoting self-efficacy will facilitate RTW. However, it remains unclear whether changing initial self-efficacy growth on RTW. Possibly initial self-efficacy scores are merely an indicator of cases with an (un)favourable RTW prognosis.

The predictive value of self-efficacy growth was analysed by modelling a (linear) self-efficacy growth parameter with multilevel analyses and add this parameter as a predictor into a Cox regression analysis. The results showed that not only baseline self-efficacy, but also self-efficacy growth until full RTW predicted time to full RTW. The predictive value of self-efficacy growth was demonstrated for both people with high and low baseline self-efficacy. Thus, enhancing self-efficacy appears a fruitful strategy to promote RTW in employees on sick leave with CMD, irrespective of their initial self-efficacy level.

Chapter 6 focuses on the question: "What subgroups benefit most from W-CBT?". A legitimate concern from the therapists involved in our trial was the occurrence of negative side effects of W-CBT on symptom development, especially among clients with more severe symptoms. In order to facilitate future implementation of W-CBT it is important the therapists believe that W-CBT is adequate for their specific clients. Therefore, this chapter focuses on the differential effectiveness of W-CBT.

Within the same sample (N=168) we investigated to what extent the more severe cases (with higher baseline depressive symptoms and lower self-efficacy) would benefit from W-CBT compared with less severe cases. The outcome measures used were both RTW and recovery of CMD symptoms. Among individuals with high self-efficacy, W-CBT resulted in faster full and partial RTW compared to regular CBT. Hence, with respect to RTW W-CBT had additional value over CBT even for employees with relatively higher intial RTW chances (based on their baseline self-efficacy score). For individuals with low self-efficacy, W-CBT did not result in faster full RTW, but it did enhance partial RTW compared to CBT. Within the W-CBT group, individuals with high levels of RTW-SE reported a faster return to work compared to individuals with low levels of RTW-SE. Hence, with respect to full RTW, individuals with higher RTW-SE benefited to a greater extent from W-CBT. The effectiveness of W-CBT on RTW did not depend on baseline depressive complaints or anxiety. Hence, with respect to RTW, both individuals with less severe and more severe psychological symptoms, benefited from W-CBT. Similarly the effects of W-CBT on the recovery of mental health complaints did not differ between the more severe cases (those started off with higher depression scores or lower self-efficacy scores) compared to the less severe cases. Although employees with low baseline self-efficacy do not benefit from W-CBT with respect to full RTW, W-CBT did not hinder the recovery of their mental health problems. As work-focused CBT was more effective in promoting partial return to work both for employees with high and low self-efficacy, we would advise clinical therapists to use work-focused CBT as a preferred treatment among their clients who are absent from work with CMD.

Chapter 7. This chapter answers the question 'What factors should be addressed in interventions that aim to promote (return to) work outcomes for (major) depressed workers? At the time we developed W-CBT no studies had researched the effectiveness on RTW of such dual-focused CBT interventions for employees with (major) depression, which is considered a more a more disabling type of CMD. Therefore, from an ethical point of view, we excluded patients with major depression in this trial (but not those with minor depression or dysthymia). The aforementioned conclusions about the effectiveness of W-CBT can, therefore, not be generalized to employees with major depression without caution. However, (major) depression is an important reason for long-term sick leave and impaired work functioning. Hence, evidence based interventions that improve work outcomes for this group is determining what factors are relevant and may be focus of interventions. Because of the recurrent nature of depression and the focus in the research field shifting from mere RTW to sustainable RTW, insight in predictive factors is valuable both with respect to *work participation (WP)* and *work functioning (WF)*.

Therefore we conducted a systematic literature review of studies identifying factors associated with WP and WF of currently depressed workers. A total of 30 studies were found that addressed factors associated with WP (N = 19) or WF (N = 11). Due to the cross-sectional nature of about half of the studies, only few true predictive relationships could be indentified. In this review *strong evidence for a predictive relation* was defined as consistent findings from at least 2 longitudinal studies. For WP two outcomes measures were distinguished: 1) *work disability* related to the depression (such as absenteeism, disability benefits, or RTW) and 2) *terminating employement* without reported health resaons (e.g., being fired or early retirement). Similarly we disnquished two outcome measures for WF: 1) *work limitations* (difficulty with execution of specific tasks) and 2) *work productivity*.

For both WP and WF, studies reported most often on the relationship with disorder-related factors, whereas personal factors and work-related factors were less frequently addressed. For WP, the following relationships were supported: strong evidence was found for the association between a long duration of the depressive episode and work disability. Moderate evidence was found for the associations between more severe types of depressive disorder, presence of co-morbid mental or physical disorders, older age, a history of previous sick leave, and work disability. For WF, severe depressive symptoms were associated with work limitations, and clinical improvement was related to work productivity (moderate evidence). Hence, in order to promote work outcomes for depressed workers early access to adequate MHC should be facilitated, especially for people with unfavourable RTW prognosis such as older workers, workers with a history of sick leave, and those with more severe depression. To draw conclusions about what personal factors and work-related factors (such as self-efficacy or supervisory support) should be addressed in future interventions, more longitudinal research is needed.

Chapter 8 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 two key issues: 1) the role of self-efficacy in the RTW process, and 2) the effectiveness of W-CBT.

It is concluded that self-efficacy plays an important role in the RTW process for workers with CMD. Both initial levels and self-efficacy growth predict faster RTW. This argues for the use of theoretical models that include self-efficacy for the design and evaluation of RTW interventions for these workers. It is advised to enhance self-efficacy in future interventions, as this appears a fruitful strategy to promote RTW, irrespective of initial self-efficacy levels. In addition, self-efficacy scores may be used in practice to monitor RTW-readiness and offer tailored RTW-solutions.

We can conclude that W-CBT leads to faster RTW compared to CBT without negative consequences for the recovery of psychological complaints, irrespective of baseline symptom level. This positive effect could, however, not be explained by stronger increases of self-efficacy within the W-CBT group. For employees with low baseline self-efficacy W-CBT did not result in faster full RTW, compared to CBT. However, these low self-efficacious employees who received W-CBT showed earlier partial RTW compared to CBT and similar symptom recovery as CBT clients.

Considering the benefits of W-CBT and the relatively low additional costs of W-CBT, we would recommend W-CBT for all workers on sick leave with CMD. Main challenges regarding RTW interventions for workers with CMD are to unravel mediating factors or effective intervention elements and tailor RTW interventions to the needs of low self-efficacious workers.

To conclude, this dissertation has provided valuable insights in the RTW process and offered practical tools that may be used enhance the effectiveness of RTW interventions for workers with CMD and refine theoretical models of RTW.

Samenvatting

SAMENVATTING.

Het doel van dit proefschrift is het vergroten van inzicht in effectieve begeleiding bij het werkhervattingsproces van werknemers met veelvoorkomende psychische klachten. Dit proefschrift richt zich specifiek op de invloed van 'self-efficacy' (competentiebeleving) en werkgerichte cognitieve gedragstherapie (W-CGT) op re-integratie succes bij deze doelgroep.

Hoofdstuk 1 geeft een beschrijving van de belangrijkste begrippen uit dit proefschrift en licht toe waarom het van belang is om het effect van (psychologische) interventies op werkhervatting te versterken. Psychische klachten zoals depressie, angst en aanpassingsstoornis zijn veelvoorkomend in de (beroeps)bevolking en vormen een belangrijke oorzaak van (langdurig) ziekteverzuim. Langdurig ziekteverzuim gaat gepaard met negatieve sociale en financiële consequenties voor zowel de betreffende werknemer, de werkgever en de maatschappij. Het is daarom van groot belang dat effectieve re-integratie interventies worden geïmplementeerd.

Enkele studies hebben de effectiviteit van interventies op re-integratiesucces onderzocht onder werknemers met veelvoorkomende psychische klachten. Er is echter nog beperkt inzicht in daadwerkelijk effectieve interventies, met name wat betreft interventies vanuit de Geestelijke Gezondheidszorg (GGZ). Een aanzienlijke groep van werknemers met psychische klachten wordt wel begeleid door een GGZ-professional, maar deze professionals besteden over het algemeen weinig aandacht aan werkaspecten in de therapie. Eerdere studies naar interventies van buiten het GGZ-werkveld hebben laten zien dat interventies effectiever zijn wanneer deze klinische en werkgerichte strategieën combineerden. In dit proefschrift wordt daarom een GGZ-interventie geëvalueerd (werkgerichte cognitieve gedragstherapie) die werkaspecten op een systematische wijze integreert in de klinische behandeling. Een andere lacune in onderzoek naar effectieve werkhervattingsinterventies betreft het geringe inzicht in onderliggende verandermechanismen. Dergelijk inzicht is waardevol om de theoretische basis voor re-integratie interventies aan te scherpen en daarmee een basis te vormen voor het ontwikkelen van effectieve interventies in diverse contexten. In dit proefschrift is daarom speciale aandacht voor de rol van werk gerelateerde self-efficacy als mogelijk verklarend mechanisme in het werkhervattingsproces. Werk gerelateerde self-efficacy is in dit proefschrift gedefinieerd als de mate waarin werknemers verwachten dat zij succesvol hun werk kunnen hervatten (de competentiebeleving met betrekking tot werken en werkhervatting).

Hoofdstuk 2 is gericht op de onderzoeksvraag: 'Hoe kan werk gerelateerde self-efficacy valide en betrouwbaar worden gemeten?' Omdat er nog geen meetinstrument voorhanden was om self-efficacy in de context van re-integratie voor werknemers met psychische klachten te meten, hebben we een nieuwe vragenlijst ontwikkeld. In dit hoofdstuk wordt de ontwikkeling en validatie van deze zelfrapportage vragenlijst (11 items) beschreven. De vragenlijst omvat self-efficacy-cognities die relevant zijn voor werkhervatting bij de doelgroep met veelvoorkomende psychische klachten. Deze cognities hebben onder andere betrekking op concentratie, omgaan met werkdruk, grenzen stellen, omgaan met emotioneel veeleisende situaties en energie regulatie.

Verzuimende Nederlandse werknemers met psychische en /of lichamelijke klachten vanuit 3 verschillende steekproeven (n=2.214) zijn gebruikt om de self-efficacy vragenlijst te valideren. Deze werknemers verzuimden bij het eerste meetmoment tussen de 9-20 weken, en 69% ervaarden klinische niveaus van psychische klachten. Deze klinische niveaus waren vastgesteld op basis van een diagnose van een GZ-psycholoog (DSM-IV criteria) of op basis van afkappunten van gevalideerde vragenlijsten voor burn-out (UBOS) of depressie (DASS). De factorstructuur en de interne betrouwbaarheid kon bij de hele steekproef worden getoetst. Correlatie met andere constructen op *baseline* kon in een deel van de steekproef worden onderzocht (variërend per

construct tussen n=88 en n=1.931). Om de sensitiviteit voor verandering over tijd in kaart te brengen (3 en 6 maanden na *baseline*) konden gegevens van 175 GGZ-cliënten worden gebruikt. De test-hertest betrouwbaarheid kon 2 weken na *baseline* worden gemeten bij 65 werknemers. Tot slot kon de predictieve validiteit van self-efficacy voor werkhervatting worden vastgesteld bij 245 respondenten op basis van hun werkstatus 3 maanden na *baseline*.

De self-efficacy vragenlijst was van uitstekende interne betrouwbaarheid, had voldoende testhertest betrouwbaarheid en was gevoelig voor verandering over de tijd. Op basis van de factor- en betrouwbaarheidsanalyses bleek werk gerelateerde self-efficacy een eendimensionaal construct. De richting en sterkte van de correlaties met algemene self-efficacy, *locus of control*, actieve coping, fysieke werkbelasting en psychische klachten ondersteunden de construct validiteit van het instrument. De mate van depressie was weliswaar gecorreleerd met self-efficacy (r = -.51), maar de 2 constructen bleken ook duidelijk onderscheidbaar van elkaar wat betreft de factorstructuur en hun verschillende predictieve waarde voor werkhervatting. Self-efficacy was wel voorspellend voor volledige werkhervatting na 3 maanden (Exp(B) = 1.4, p < .05), terwijl de mate van depressie geen voorspellende waarde had. De nieuwe vragenlijst was gebruikersvriendelijk (bestaande uit 11 items) en toepasbaar voor werknemers uit alle soorten beroepen. Deze praktische voordelen en de eerste positieve psychometrische kenmerken, maken het aannemelijk dat deze vragenlijst van meerwaarde is voor onderzoek, in de klinische praktijk en in de context van de bedrijfsgezondheidszorg.

Hoofdstuk 3 beantwoordt een belangrijke onderzoeksvraag van dit proefschrift: 'Wat zijn de effecten van werkgerichte cognitieve gedragstherapie (W-CGT) op werkhervatting en psychische klachten?'. Bij W-CGT werden werkaspecten vroegtijdig en systematisch geïntegreerd in de therapie. Hierbij werd de het werk als context gebruikt om reguliere therapiedoelen vorm te geven. W-CBT ondersteunt een effectief werkhervattingsproces door het borgen en vergroten van succes ('mastery') ervaringen tijdens de werkhervatting. De werkelementen die werden geïntegreerd in de therapie bestonden hoofdzakelijk uit: 1) werkgerichte psycho-educatie, 2) een gedetailleerde werkanamnese 3) een gradueel werkhervattingsplan op maat waarin ook aandacht was voor omgaan met terugval of tegenslag, 4) evaluatie van de voortgang m.b.t. werkhervatting, 5) het gebruik van de werkcontext bij andere therapie onderdelen (zoals het uitdagen van werk gerelateerde irrationele cognities).

Aan dit quasi-experimentele onderzoek deden 168 verzuimende werknemers mee met veelvoorkomende psychische klachten die zich hadden aangemeld voor een GGZ-behandeling. De effecten van W-CGT (n=89) op klachtenherstel en werkhervatting binnen een jaar werden vergeleken met een controlegroep die reguliere CGT ontving (n=79).

Cox regressieanalyse liet zien dat werknemers die W-CGT ontvingen eerder partieel aan het werk waren (12 dagen) en eerder volledig hun werk hervatten (65 dagen) dan werknemers die CGT ontvingen. De kostenbesparing voor de werkgever die gepaard gaat met deze snellere werkhervatting werd geschat op 5.275 Amerikaanse dollar per werknemer (ongeveer 4.900 euro). Het percentage werknemers dat binnen 1 jaar het werk volledig had hervat verschilde echter niet tussen de interventiegroepen (rond de 90% in beide groepen). De opbouw tot aan volledige werkhervatting verschilde echter wel tussen beide groepen. Zoals eerder genoemd waren de werknemers bij W-CGT eerder partieel aan het werk. Daarnaast namen zij meer (en derhalve ook kleinere) stappen in de opbouw tot aan de volledige hervatting. Tot slot kwamen kleine en tijdelijke terugvallen in het percentage werkhervatting vaker voor bij W-CGT dan bij CGT (16% versus 8%). Dit verschil was echter niet significant. Een significante afname van psychische klachten trad bij beide interventiegroepen even sterk op.

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Deze resultaten laten zien dat werkhervatting bespoedigd kan worden door in een reguliere GGZbehandeling door meer en eerder aandacht te besteden aan werkaspecten, zonder dat dit het klachtenherstel belemmert. Het is aan te bevelen om de effecten van W-CCT te herhalen in een gerandomiseerde effectstudie met *follow-up* periode van meer dan 1 jaar.

Hoofdstuk 4 besteedt aandacht aan 2 onderzoeksvragen. Ten eerste: '*Hoe verandert self-efficacy in de loop van de tijd gedurende het werkhervattingsproces?*'. In dezelfde steekproef als beschreven in hoofdstuk 3 (n=168) werd self-efficacy 5 keer gemeten binnen 9 maanden. Alle meetmomenten voorafgaand aan het moment van volledige werkhervatting werden gebruikt om middels multilevel-analyses individuele groeiparameters (lineair en kwadratisch) te berekenen. De resultaten toonden een curvelineaire groei van self-efficacy, waarbij de grootste stijging plaatsvond in de eerste maanden van de behandeling. Exploratieve beschrijvende analyses lieten daarnaast zien dat deze groei meestal kleine golfbewegingen vertoonde (bij 64% van de respondenten), en dat de groei in self-efficacy later op gang kwam bij werknemers die ook later volledig aan het werk gingen. Tot slot suggereren de beschrijvende resultaten dat een self-efficacy niveau tussen de 3.8 en de 4.5 (op een schaal van 1-6), een noodzakelijke drempelwaarde is voor het optreden van volledige werkhervatting.

Ten tweede beschrijft dit hoofdstuk de rol van self-efficacy als mogelijk verandermechanisme in het werkhervattingsproces: 'Kunnen de effecten van werkgerichte cognitieve gedragstherapie (W-CGT) worden verklaard door verschillen in het verloop van self-efficacy? Hiervoor hebben we getoetst of W-CGT leidde tot een sterkere of snellere groei van self-efficacy vergeleken met CGT. Tegen de verwachtingen in liet multilevel-analyse zien dat de curvelinaire groei van self-efficacy in beide interventiegroepen gelijk was. Grafische weergave van deze groeicurves laten een trend zien dat self-efficacy sterker groeit in de eerste maanden bij W-CGT dan bij CGT. Deze trend kon echter niet statistisch worden aangetoond. Ook de beschrijvende analyses lieten zien dat het groeipatroon van self-efficacy (zoals de aanwezigheid van golfbewegingen) niet verschilde tussen de interventiegroepen. Omdat de groei van self-efficacy gelijk verliep bij beide therapievormen concluderen we vooralsnog dat self-efficacy geen mediator kan zijn die het effect van W-CGT op werkhervatting kan verklaren. Vervolgonderzoek kan deze conclusie mogelijk weerleggen wanneer self-efficacy frequenter wordt gemeten in de eerste maanden van de behandeling.

Hoofdstuk 5 richt zich op de predicitieve rol van self-efficacy in het werkhervattingsproces: 'Ziin baseline self-efficacy en toenames van self-efficacy voorspellend voor een snellere werkhervatting?'. Hoewel we niet konden aantonen dat self-efficacy een mediërende rol speelt bij de effectiviteit van werkgerichte cognitieve gedragstherapie, kan het versterken van selfefficacy nog steeds een effectieve strategie zijn om werkhervatting te stimuleren. Eerdere studies hebben laten zien dat pre-interventie niveaus van self-efficacy voorspellend zijn voor werkhervatting, en verwachtten op basis daarvan dat het vergroten van aanvangsniveaus van selfefficacy de kans op tijdige werkhervatting vergroot. Het is echter nog onduidelijk of dit daadwerkelijk het geval is, aangezien er nog geen studies zijn die het effect van self-efficacy groei op werkhervatting hebben onderzocht. Het is namelijk ook mogelijk dat hogere aanvangsniveaus van self-efficacy slechts een indicatie zijn van cases met een gunstigere werkhervattingsprognose. De predictieve waarde van self-efficacy groei is geanalyseerd door de eerder genoemde selfefficacy groei parameters (zie hoofdstuk 4) toe te voegen aan een Cox Regressie model. De resultaten van deze Cox analyse lieten zien dat zowel baseline self-efficacy als self-efficacy groei (voorafgaand aan volledige werkhervatting), de duur tot werkhervatting voorspellen. Een sterkere self-efficacy groei voorspelde werkhervatting zowel bij werknemers die bij aanvang een laag self-

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efficacy niveau hadden als bij werknemers met een hoog aanvangsniveau. Het versterken van selfefficacy blijkt dus een waardevolle strategie om werkhervatting te bevorderen van werknemers met psychische klachten, onafhankelijk van het aanvangsniveau van self-efficacy.

Hoofdstuk 6 is gericht op onderzoekvraag; "Welke subgroepen hebben het meeste voordeel van werkgerichte cognitieve gedragstherapie (W-CGT)?'. Een terechte zorg van de therapeuten in onderhavig onderzoek betrof het optreden van negatieve bijeffecten van W-CGT op het klachtenbeloop, in het bijzonder voor cliënten met meer ernstige symptomen. Voor een verdere implementatie van W-CGT is het van belang dat therapeuten er van overtuigd zijn dat W-CGT succesvol toepasbaar is bij specifieke cliënten. Dit hoofdstuk richt zich daarom op de differentiële effectiviteit van W-CGT.

In dezelfde steekproef als beschreven in hoofdstuk 3 (n=168) is onderzocht welke effecten W-CCT had bij de *meer ernstige cases* (met ernstigere depressieklachten en lagere self-efficacy op baseline), vergeleken met de *minder ernstige cases*. Hiervoor is gekeken naar de effecten van W-CGT op zowel werkhervatting als klachtenherstel.

Bij werknemers met hoge self-efficacy resulteerde W-CGT in snellere volledige en partiele werkhervatting vergeleken met reguliere CGT. W-CGT had dus toegevoegde waarde (vergeleken met CGT) ook voor werknemers die bij aanvang al grotere werkhervattingskansen hadden (op basis van hun baseline self-efficacy niveau). Voor werknemers met lage self-efficacy leidde W-CGT niet tot snellere volledige werkhervatting, maar wel tot een snellere partiele werkhervatting vergeleken met CGT. Binnen de groep die W-CGT ontving waren werknemers met hoge self-efficacy niveaus sneller aan het werk dan werknemers met lage self-efficacy. Wat betreft volledige werkhervatting, kunnen daarom concluderen dat werknemers met een hoge self-efficacy meer baat hebben bij W-CGT. De effectiviteit van W-CGT op werkhervatting werd niet beïnvloed door het aanvangsniveau van psychische klachten. Dat wil zeggen dat zowel werknemers met een hoog als een laag baseline niveau van psychische klachten, baat hadden van W-CGT wat betreft werkhervatting.

W-CBT en CGT waren in de totale groep even effectief wat betreft het herstel van psychische klachten. De effecten van W-CGT op klachtenherstel verschilden niet tussen de *meer ernstige cases* (die bij aanvang meer depressieve klachten en lagere self-efficacy hadden) en de *minder ernstige cases*.

Hoewel werknemers met lage self-efficacy niet eerder volledig aan het werk gingen door W-CGT, vormde W-CGT geen belemmering voor hun klachtenherstel. Omdat W-CGT wel effectief was wat betreft partiele werkhervatting zowel bij werknemers met hoge als lage self-efficacy, adviseren we klinisch psychologen om W-CGT aan te bieden aan cliënten die verzuimen van het werk vanwege psychische klachten.

Hoofdstuk 7 draait om de onderzoeksvraag: 'Welke factoren zouden aan bod moeten komen bij interventies die werkuitkomsten willen verbeteren bij werkenden met een (ernstige)depressie?'. Van de veel voorkomende psychische klachten (depressie, angst, burn-out/ aanpassingstoornis) wordt ernstige depressie als het meest invaliderend beschouwd. Op het moment dat werkgerichte cognitieve gedragstherapie (W-CGT) werd ontwikkeld, waren er nog geen studies voorhanden die effectiviteit van dergelijke geïntegreerde interventies op werkhervatting bij (ernstig)depressieve werknemers hadden onderzocht. Vanuit ethische overwegingen hebben we daarom in de effectstudie van W-CGT werknemers met ernstige depressie uitgesloten van deelname (dit gold niet voor lichte depressie of dysthymie). De eerdere conclusies over de effectiviteit van W-CGT kunnen daarom niet zondermeer gegeneraliseerd worden naar werknemers met ernstige

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depressie. Omdat (ernstige) depressie echter vaak samenhangt met langdurig ziekteverzuim en verminderd functioneren in het werk, is het belangrijk dat interventies ook voor depressieve werknemers bijdragen aan betere werkuitkomsten. Een eerste stap in de (door-)ontwikkeling van interventies voor deze groep, is het vaststellen van predictoren voor werkuitkomsten die kunnen worden beïnvloed door een interventie. Gezien het chronische (terugkerende) patroon van veel depressies, en de toenemende aandacht voor duurzame arbeidsparticipatie in het veld, is het van belang inzicht te krijgen in predictoren van zowel arbeidsparticipatie als van de kwaliteit van het arbeidsfunctioneren.

We hebben daarom een systematisch literatuuronderzoek gedaan naar factoren die samenhangen met arbeidsparticipatie (transities van 'werk' naar 'niet werken/ziekteverzuim' of omgekeerd) en arbeidsfunctioneren bij depressieve werkenden. In totaal konden 30 studies worden geïncludeerd waarvan er 19 betrekking hadden op arbeidsparticipatie en 11 op arbeidsfunctioneren. De meeste studies waren van cross-sectionele aard waardoor echte predictieve relaties lastig waren vast te stellen. Sterk bewijs voor een predictieve relatie werd in deze overzichtsstudie gedefinieerd als consistente bevindingen van tenminste 2 longitudinale studies.

Voor arbeidsparticipatie werden twee uitkomstmaten onderscheiden namelijk 1) *arbeids(on)geschiktheid* samenhangend met depressieve klachten (zoals ziekteverzuim, arbeidsongeschiktheidsuitkeringen of werkhervatting) en 2) *het stoppen met werken* zonder specifieke gezondheidsreden (zoals ontslag of vroegtijdige pensionering). Voor arbeidsfunctioneren werden ook twee uitkomstmaten gehanteerd namelijk 1) *werkbeperkingen* (belemmeringen bij specifieke taakuitvoering) en 2) *arbeidsproductiviteit*.

Voor beide uitkomstmaten (arbeidsparticipatie en arbeidsfunctioneren) beschreven deze studies voornamelijk de invloed van stoornis gerelateerde factoren, terwijl er veel minder aandacht was voor andere persoonlijke factoren of werk gerelateerde factoren. Wat betreft *arbeidsparticipatie* vonden we sterk bewijs voor een relatie tussen de duur van de depressieve episode en (korte of langdurige) arbeidsongeschiktheid. Een redelijke bewijskracht werd gevonden voor de relatie tussen arbeidsongeschiktheid en 1) de meer ernstige typen depressie, 2) co-morbide fysieke of psychische aandoeningen, 3) hogere leeftijd en 4) eerdere periodes van ziekteverzuim. Wat betreft *arbeidsfunctioneren* kon redelijke bewijskracht worden gevonden voor de relatie tussen 1) de ernst van de depressieve symptomen en de mate van werkbeperkingen, en 2) klinisch klachtenherstel en een hogere productiviteit op het werk.

Om werkuitkomsten te verbeteren voor depressieve werkenden is het belangrijk om snelle toegang tot kwalitatief hoogstaande GGZ-begeleiding te faciliteren. Dit geldt in het bijzonder voor degenen met een ongunstig werkhervattingsperpectief zoals oudere werknemers, werknemers met een geschiedenis van ziekteverzuim, en diegenen met een meer ernstige depressie. Om conclusies te kunnen trekken over welke persoonlijke -en werk gerelateerde factoren (zoals selfefficacy of steun van de leidinggevende) moeten worden beïnvloed door interventies is meer longitudinaal onderzoek nodig.

In **hoofdstuk 8** 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 met betrekking tot 1) de rol van self-efficacy in het werkhervattingsproces, en 2) de effectiviteit van werkgerichte cognitieve gedragstherapie (W-CGT).

We concluderen dat self-efficacy een belangrijke rol speelt in het werkhervattingsproces voor werknemers met veelvoorkomende psychische klachten. Zowel het aanvangsniveau van selfefficacy als de groei van self-efficacy over de tijd voorspellen werkhervatting op de korte en de langere termijn. Dit pleit ervoor om bij het ontwikkelen en evalueren van re-integratie interventies theoretische modellen waar self-efficacy een onderdeel van is als uitgangspunt te nemen. Het is aan te raden dat toekomstige interventies werk gerelateerde self-efficacy versterken omdat dit een zinvolle strategie blijkt om werkhervatting te bespoedigen, onafhankelijk van het aanvangsniveau van self-efficacy. Daarnaast kunnen self-efficacy scores in de praktijk worden gebruikt om in kaart te brengen of werknemers klaar zijn voor werkhervatting en om maatwerk te leveren in de begeleiding.

Wat betreft de effectiviteit van W-CGT kunnen we concluderen dat deze interventie werkhervatting bespoedigt, zonder dat dit negatieve bijeffecten heeft op het klachtenherstel. Deze positieve effecten zijn onafhankelijk van het klachtenniveau bij aanvang. Dit positieve effect valt echter niet te verklaren door een sterkere stijging van self-efficacy binnen W-CGT. Voor werknemers met een lage self-efficacy is W-CBT niet effectiever dan reguliere CGT wat betreft het versnellen van volledige werkhervatting. Deze werknemers met lage self-efficacy gaan wel sneller partieel aan het werk door W-CGT, ook zonder dat dit het klachtenherstel belemmert.

Gezien de positieve effecten van W-CGT en de relatief lage additionele kosten van W-CGT raden we deze interventie aan voor alle verzuimende werknemers met veelvoorkomende psychische klachten.

Concluderend heeft dit proefschrift waardevolle inzichten opgeleverd in het werkhervattingsproces van werknemers met psychische klachten, biedt het praktische handvatten die kunnen worden gebruik om de effectiviteit van werkhervattingsinterventies te verbeteren en theoretische modellen aan te scherpen.

Dankwoord



DANKWOORD.

Het lukt niet zonder vertrouwen. Het vertrouwen dat je ideeën hout snijden, dat tegenslag te overwinnen is en dat een proefschrift ook na meer dan 10 jaar een keer afkomt... Dat vertrouwen haal je uit jezelf, maar zeker ook uit anderen. Ik wil een aantal mensen in het bijzonder bedanken die hieraan een bijdrage hebben geleverd.

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APPENDIX.

(Familie) liefde op één

"Ik ga op vakantie en ik neem mee: m'n knuffel, m'n cars, en natuurlijk mamma's laptop.." Lieve Pieter, Seb en Juul, dat is nu niet meer nodig! Omdat ik dit traject de laatste jaren naast m'n werk heb gedaan, en mijn 'zitvlees' beperkt was, duurde de afronding erg lang. Dank voor jullie geduld, flexibiliteit en trots! Lieve Pieter, jij leeft vanuit een overtuiging dat er ruim baan moet zijn voor ontwikkeling en 'dingen waar iemands ogen van gaan glimmen'. Dank dat je mij hier, alsof het een vanzelfsprekendheid was, jouw steun voor hebt gegeven! Of dit nu was door de gitaarluwe weken tijdens de eindsprint of je vertedering als ik weer eens helemaal opging in mijn proefschrift. Nu weer meer tijd voor andere dingen: *Let's dance*!

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Appendix 1: Description of Common Mental Disorders (CMD)

Common mental disorders (CMD) refer to mild to moderately severe mental disorders that meet the criteria of a disorder according to psychiatric classification systems such as adjustment disorder, anxiety disorder and depressive disorder. CMD can be distinguished from severe mental disorders, such as schizophrenia, by the severity of impairment caused by the psychiatric disorder and the expected duration of the disorder (severe mental disorders often have a chronic course and a duration of 2 years or more) (Bouman, van Ede, de Jong, Nieuwenhuijsen, & van der Veen, 2015). Many CMD co-occur with other mental- or psychical health problems. For example substance abuse, depression and anxiety disorders are often comorbid (OECD, 2012; American Psychiatric Association, 2014).

- Adjustment disorder is defined as emotional or behavioral symptoms in response to an identifiable stressor occurring within three months after the onset of the stressor. When accompanied with a stressful life event other frequently used terms for minor mental health problems (such as 'stressrelated mental disorder', 'burn-out', 'emotional distress', 'surmenage' or 'sub-threshold depression') might in most cases be viewed as an adjustment disorder too (Arends, 2013).
- Anxiety disorders are generally characterized by the features of unrealistic and/or excessive anxiety, fear, worry, and avoidance. Different types of anxiety disorders exist (e.g., social anxiety, panic disorder, generalized anxiety disorder, specific phobia and obsessive compulsive disorder) and they can be distinguished based on the object of fear or avoidance behavior.
- Depressive disorder (or mood disorder) is characterized by 1 or 2 core symptoms: depressed /low mood or a loss of interest or pleasure in daily activities. In addition other symptoms can be present such as feelings of inadequacy / hopelessness, sleep disturbance, weight change, fatigue, impaired concentration, agitation or slowing down of movement and thought, and recurrent thoughts of death or suicide. Different depressive disorders can be classified based up on symptom severity, the number of mental or physical symptoms and the duration of the symptoms. To meet the criteria for major depression at least 1 core symptom should be present for more than two weeks and at least 5 additional symptoms. Less severe categories include for example mild fluctuating depression (dysthymia) and minor depressive disorder (depressive disorder not otherwise specified) that require less than 5 additional symptoms (American Psychiatric Association, 2014; Nieuwenhuijsen et al., 2012).

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Appendix 2: RTW in the Dutch socio-legal context

In order to understand the outcomes and implications of this dissertation, it is important to take the sociolegal context of this trial into account. The Dutch social security policy can be characterized as 'integrated' and 'social democratic' implying that that it is relatively generous with respect to income compensation (e.g., with respect to criteria to qualify or length of compensation), but in addition has an extensive focus on reintegration. Both social democratic and integrated policies are associated with more successful RTW, particularly for the low educated, compared with countries that focus mainly on income compensation (Stress Impact Consortium, 2006; Dewa et al., 2014).

Since the introduction of the Gatekeeper Improvement Act in 2002, Dutch employees and employers share the responsibility for an optimal RTW process. The employer is obliged to cover the payment of at least 70% of the wage during the first two years of sickness absence with either work-related or non work-related causes. The employer has to (financially) facilitate work adjustments if needed and has to hire an independent OP that advices both the employer and employee during the RTW process. Hence, partial or gradual RTW is facilitated by law in the Netherlands. Employees are by law required to visit the OP within the first 6 weeks of sickness absence. The OP draws a multifactorial problem analysis and, based on this analysis and advice from the OP, the worker and the employer set up a RTW plan. If insufficient RTW efforts have been made by either the employer or the employee, they can be sanctioned by the National Social Security Office. When RTW has not been accomplished in 2 years, the employee can apply for a permanent disability benefit paid by the national authorities. When this claim is not granted an employee can receive (minimal) welfare from the municipality.

Dutch workers on sick leave with CMD most often contact their General Practitioner (GP) and their Occupational Physician (OP) for support during their recovery. However, these professionals often lack time and skills to optimally signal and manage CMD (Anema et al., 2006; Buijs, van Dijk, Evers, van der Klink, & Anema, 2007). Before the start of this trial Dutch OP's started to work based on a guideline for managing sick leave because of mental health problems (van der Klink et al., 2007). This OP guideline advices referral to MHC when CMD are more severe than an adjustment disorder (e.g., anxiety or depression) or when the RTW of a client with adjustment disorder is stagnating. Additionally, GP's can refer their clients to MHC without involvement of the OP or other workplace stakeholders. This underlines the importance of the psychologist as a stakeholder in the RTW process. In comparison to other countries MHC in the Netherlands is characterized by a wide range and open accessibility of treatments, amongst others because financial barriers to MHC are limited (Bijl, & Ravelli, 2000; OECD, 2014). Most people will receive funding from their health insurance company for MHC when they are referred by either their GP or OP.

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