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Work-directed rehabilitation of sickness absence beneficiaries with mental health problems

Evaluation of a complex intervention implemented in four settings

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Contents

Abbreviations

CCM: Conventional case management

CTWR: Coordinated and tailored work rehabilitation

GP: General practitioner

ICF: International classification of functioning , disability and health

MHP: Mental health problem

NRCWE: National Research Centre for the Working Environment

RTW: Return to work

RCT: Randomised controlled trial

SIO: Social insurance officer

WDS: Work disability screening

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This thesis marks the end of my employment with the NRCWE, at least for the time being. When I first came to the place as a Master's student in 2008, I never imagined that six years later I would be sitting in Scotland writing acknowledgements for a PhD-thesis. But the smart, ambitious people I came to work with at the NRCWE inspired and encouraged me to take on this professional and personal challenge. Although there have been moments of frustration and despair, the journey from start to finish has been extremely rewarding. The company of my colleagues in the PIVA -group made even the longest days enjoyable, the helpfulness of colleagues from other research groups gave almost every problem a solution, and the continuous support, advice, consistent kindness and generosity of my primary advisor, Professor Reiner Rugulies, made me believe that the hard work would be worthwhile and everything would come together eventually. With the personal challenges that I squeezed into my time as a student (having two children and relocating to another country), I owe sincere gratitude to everyone involved, especially my project advisor, Maj Britt Dahl Nielsen, for her tireless efforts and invaluable contributions throughout the project, and to the NRCWE's director of research coordination, Glen Winzor, for his support and understanding.

Summary

Long-term sickness absence is an issue of concern for local municipalities, policy makers, and employers, as it negatively affects the quality of life of the sick-listed individuals, their families, productivity and society in general [1, 2]. In recent years, sickness absence due to mental health problems (MHPs), such as depression, anxiety and stress-related disorders, has been increasing, and MHPs are now the leading cause of long term sickness absence and disability pensioning in many industrialised countries, including Denmark [1].

In the fall of 2007 the Danish Prevention Fund (Forebyggelsesfonden; now: Fonden for Forebyggelse og Fastholdelse) granted support to the implementation and evaluation of a complex return-to-work (RTW) intervention aimed at sickness absence beneficiaries with MHPs in four Danish municipalities (Copenhagen, Greve, Solrød & Lejre). The intervention was organised as a collaboration between local sickness benefit offices and a private company specialising in multidisciplinary, coordinated and tailored work rehabilitation (CTWR). The National Research Centre for the Working Environment (NRCWE) was commissioned to carry out an external evaluation of the project. This thesis presents the design, execution, and results of the evaluation.

The purpose of the PhD-project was to investigate the implementation process, assess the effects of the intervention on RTW and health related outcomes, and to draw out methodological learning points of use to future evaluations of complex RTW-interventions. The process evaluation was based on a theory of the working mechanisms of the intervention and utilised data from interviews, observations, documents, questionnaires and national registers. The effect evaluation was designed as a quasi-randomised trial using data from national registers and questionnaires. The outcomes of interest were time to RTW, labour market status at follow-up (one and two years after first day of sickness absence), cumulative sickness absence at follow-up, risk of recurrent sickness absence and unemployment after RTW, and changes in self-reported work ability and health- variables. To minimise bias caused by unmeasured or imprecisely measured confounding, I used instrumental variable analysis as a complement to conventionally adjusted analyses in the assessment of time to RTW.

It was only possible to conduct the effect evaluation in one of the municipalities (Copenhagen). Here, the results indicated that the intervention delayed RTW when compared to conventional case management (CCM). There was no indication that the intervention offered any advantage in terms of the other outcomes of interest.

Implementation failure may have contributed to the results. For example, it proved difficult to adhere to the original inclusion criteria. As a result, the participants were different from originally expected which made modifications of the intervention necessary. In addition, waiting time occurred between recruitment and start of the intervention, and there were cooperation difficulties

among the main stakeholders. It is also possible that the intervention theory was flawed, for example by emphasising participant's motivation for RTW as prerequisite for action when the goal of the intervention was to reduce time to RTW. Also, the theory did not appear to account for conflicting priorities and paradigms among key stakeholders. Finally the intervention may have produced unintended working mechanisms that prolonged sickness absence, such as participants reconsidering their employment situation or being passive in relation to RTW while participating in the intervention.

This study highlights several learning points for future studies of the effects of RTW-interventions implemented in municipal settings, such as the importance of including a comprehensive process evaluation, using several different outcome measures and analytical methods, and maintaining close cooperation with all stakeholders to ensure completeness of data.

Sammenfatning

Uarbejdsdygtighed på grund af sygdom kan have en lang række negative konsekvenser for både sygemeldte og deres omgivelser. Sygefravær er økonomisk belastende for arbejdsgivere og kommuner, og jo længere en sygemelding varer, jo højere er risikoen for permanent udstødelse fra arbejdsmarkedet [1, 9]. At stå uden for arbejdsmarkedet er forbundet med forringet fysisk og psykisk helbred, social isolation og økonomiske vanskeligheder [7, 8]. I de senere år er langvarigt sygefravær grundet psykiske helbredsproblemer, såsom angst, depression og stress-relaterede lidelser, blevet hyppigere i mange vestlige lande, og psykiske helbredsproblemer er i dag den førende årsag til langvarigt sygefravær og førtidspension I Danmark [1].

I efteråret 2007 bevilligede Forebyggelsesfonden (nu: Fonden for Forebyggelse og Fastholdelse) økonomisk støtte til gennemførelse og evaluering af en flerstrenget tilbage-til-arbejdet (TTA) intervention for sygedagpengemodtagere med psykiske helbredsproblemer i fire danske kommuner (København, Greve, Solrød og Lejre). Interventionen var organiseret som et samarbejde mellem de lokale jobcentre og et privat firma, der specialiserer sig i en kompleks, tværfaglig, koordineret indsats for arbejdsfastholdelse (KIA). Det Nationale Forskningscenter for Arbejdsmiljø (NFA) fik til opgave at evaluere projektet, og denne afhandling præsenterer designet, udførelsen og resultaterne af evalueringen.

Formålet med dette PhD-studie var at undersøge interventionens implementering og effekt på TTA og forskellige helbredsmål, samt at udlede metodologiske læringspunkter til gavn for fremtidige evalueringer af komplekse TTA-interventioner. Procesevalueringen var baseret på en teoretisk model af interventionens virkningsmekanismer og inkluderede data fra interviews, observationer, dokumenter, spørgeskemaer og nationale registre. Effektevalueringen var sat op som et quasi-randomiseret forsøg med brug af data fra spørgeskemaer og nationale registre. Effekten blev målt i form af tid til TTA, arbejdsmarkedsstatus ved opfølgning (et og to år efter første sygefraværsdag), akkumuleret sygefravær ved opfølgning, risiko for gentagent sygefravær og arbejdsløshed efter

TTA, samt ændringer i selvrapporterede helbredsudfald og arbejdsevne. For at mindske bias grundet skjulte eller upræcist målte, medforklarende faktorer (confounding), brugte jeg instrumental variabel analyse som supplement til traditionelt justerede analyser i undersøgelsen af tid til TTA.

Det var kun muligt at gennemføre effektevalueringen i København, da det ikke lykkedes at etablere en referencegruppe i de øvrige kommuner. Sammenlignet med almindelig sagsbehandling, viste interventionen sig at have en forsinkende virkning på TTA i København. Resultaterne tydede desuden ikke på, at interventionen havde en særlig positiv effekt på de øvrige udfaldsmål.

Når resultaterne af proces- og effektevalueringen sammenholdes, findes der tegn på både implementerings- og teorifejl. For eksempel viste det sig svært at overholde inklusionskriterierne, hvilket medførte en anderledes målgruppe end forventet og nødvendiggjorde modifikation af interventionen. Derudover opstod der ventetid mellem rekruttering og start på interventionen, og samarbejdet mellem vigtige aktører var præget af vanskeligheder. I forhold til interventionsteorien, er det muligvis uhensigtsmæssigt at fokusere på deltagernes motivation for TTA som forudsætning for handling, når målet er at reducere tiden til TTA sammenlignet med en gruppe af sygemeldte, for hvem tilskyndelsen til TTA sandsynligvis er mere økonomisk betinget. Interventionsteorien tog tilsyneladende heller ikke højde for modstridende prioriteter og paradigmer blandt hovedaktørerne. Endelig er det muligt at interventionen frembragte utilsigtede virkningsmekanismer, der forsinkede TTA, for eksempel at deltagerne valgte at skifte job eller forholdt sig passive så længe interventionen varede.

Af dette studie kan afledes flere læringspunkter for fremtidige studier af kommunalt implementerede TTA-interventioner, såsom betydningen af at inkludere en grundig procesevaluering , at bruge flere forskellige udfaldsmål og analytiske metoder, samt at etablere og opretholde et tæt samarbejde mellem forsker og interventions-aktører for at sikre det stærkest mulige datagrundlag.

Introduction

This thesis presents the design, execution and results of a comprehensive process and effect evaluation of a complex return-to-work (RTW) intervention for sickness absence beneficiaries with mental health problems (MHPs). The thesis is based on four papers, which are attached in appendix II:

- Paper 1 (Martin et al., Journal of Occupational Rehabilitation, 2012;22(3):427-436) examines the implementation of the intervention in the municipality of Copenhagen

- Paper 2 (Martin et al., Journal of Occupational Rehabilitation 2013;23(4):621-630) examines the effects of the intervention in Copenhagen over a one-year follow-up in terms of time to RTW and labour market status at follow-up.

- Paper 3 (Martin et al. 2014, submitted to Scandinavian Journal of Public Health) examines the implementation of the intervention in the three municipalities Greve, Solrød & Lejre.

- Paper 4 (Martin et al. 2014, submitted to Disability and Rehabilitation) examines the longer term effects of the intervention in Copenhagen over a period of two years in terms of labour market status, cumulative sickness absence, and risk of recurrent sickness absence and unemployment after initial RTW.

The main results from the four papers are presented in the results section of the thesis. Additionally, the results section includes analyses on changes in health-related variables among the participants from Copenhagen.

In this introduction, I first describe the background for the development of RTW-interventions and what types of interventions that have indicated effectiveness so far. I then describe some of the theoretical underpinnings of the evaluation of RTW-interventions, before moving on to discuss evaluation design and analytical options. The final part of the introduction presents the study at hand in more detail.

Sickness absence and labour market expulsion

Work plays a central role in most people's lives, and in the development, expression, and maintenance of psychological wellbeing [3]. For the individual, being part of the labour market is usually associated with good general health and increased social inclusion and feelings of personal satisfaction and accomplishment [4, 5], although this appears not to be the case for those who are exposed to problematic working conditions [6]. Conversely, loss of work, and particularly,

involuntary loss of work, is associated with a decline in somatic and psychological health, increased social exclusion, and financial difficulties [7, 8]. From a societal point of view, promoting labour market participation is essential for Denmark and other European countries that have an aging workforce and thus face a reduction in the number of citizens available to the labour market [1].

A major risk factor for labour market exclusion is prolonged sickness absence. The longer the absence, the smaller the probability of resuming work, and the higher the risk of permanent expulsion from the labour market [1, 9]. In recent decades, sickness absence has been an issue of increasing concern, as it negatively affects the quality of life of the sick-listed individuals, their families, employers and society at large [1, 2]. In particular, sickness absence due to MHPs, such as depression, anxiety and stress-related disorders (ICD-10; F43)[10], has been increasing, and MHPs are now the leading cause of long term sickness absence and disability pensioning in many industrialised countries, including Denmark [1].

It is not clear why sickness absence due to MHPs has increased. There is no evidence for an increase of the prevalence of MHPs in the general population [11]. Stansfeld et al. [12] have suggested that increased knowledge about MHPs and more effective screening and treatment methods have made the identification of MHPs easier and thus more frequent, while the stigma associated with MHPs has decreased, making patients and doctors more willing to discuss MHPs. Hensing et al. [13] have argued that increased psychosocial work environment problems, particularly in public sector workplaces, have contributed to an increase in sickness absence due to stress-related disorders. This latter argument is backed up by a large scale Danish survey showing an increase in adverse psychosocial job characteristics, such as high pace, job insecurity, and low job control from 1997 to 2005 [14]. The apparent deterioration in the psychosocial work environment, together with increasing demands for social skills and flexibility driven by industrial changes, may make it more difficult for workers in general, and workers with MHPs in particular, to fit in and keep up in the labour market [15].

Although the stigma associated with MHPs may now not be as pronounced as previously, employees with MHPs are still less favourably perceived and less likely to be retained in the workplace than employees with physical disabilities [16]. Furthermore, MHPs serious enough to warrant sickness absence often require long periods of convalescence. Studies have shown that the duration of disability due to depression is substantially longer than disability due to somatic illnesses; and that there is also a higher risk of relapse [17, 18]. All these factors make (re-)integration to the labour market for people with MHPs both an important and challenging task.

Return to work (RTW)

In the 1990's, the concept of return-to-work (RTW) as a practice to manage sickness absence was introduced in Europe and North America with the aim of promoting recovery and reducing time off work [19]. A vast amount of research has since demonstrated that RTW is a multifactorially

determined process, involving a complex interplay between the sick-listed individual and their environment. A useful framework for understanding this process is the International Classification of Functioning, Disability and Health (ICF), developed by the World Health Organisation [20], which is depicted in figure 1.

The ICF is a biopsychosocial model, showing how disability and functioning (i.e. sickness absence and RTW) are determined not only by the physical and psychological health status of the individual, but also by their sociodemographic and psychological characteristics, characteristics of the workplace, the health care options available, and the social security policies in place [21-23]. The model is supported by research showing that a reduction in health symptoms is not necessarily followed by RTW [24, 25], but that interaction of health symptoms with factors, such as inefficient health care systems, problematic relationships between the worker and the workplace, rigidity in rehabilitation welfare systems, and lack of knowledge among sickness absence beneficiaries about their rights and responsibilities, contribute to prolonged sickness absence [26].

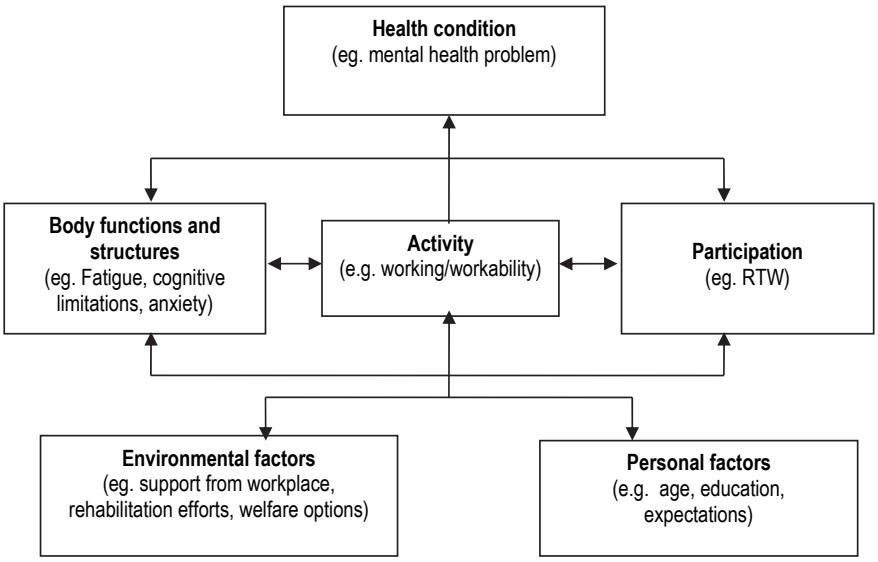

Figure 1: The International Classification of Functioning, disability and health [10]

RTW-interventions

The multifactorial nature of prolonged sickness absence and RTW calls for multifaceted efforts to promote RTW. Interventions need to consider not only the important contributions of the individual domains involved, but also the complex interplay between stakeholders (i.e. the sickness absence

beneficiary, the employer, the health providers, and the insurance providers). These stakeholders may not have a shared view of how to achieve a successful outcome, and systems that support their cooperation may not be in place [26-28].

Since the 1990's, a lot of research and some progress has been made in the field of RTW-interventions for sickness absence beneficiaries with musculoskeletal disorders. Most notably, the Canadian Sherbrooke model [29] which includes multidisciplinary assessment of the sick-listed worker, coordination of stakeholders, and involvement of the workplace in the rehabilitation process, has shown positive results and inspired many studies. In a recent literature review including nine randomized controlled trials (RCTs), Schandelmaier et al. [30] concluded that RTW coordination (defined as efforts involving a direct assessment, leading to an individually tailored RTW plan, implemented by a coordinator or a team who coordinates services and communication among involved stakeholders) increases the proportion of sickness absence beneficiaries who RTW.

Similarly, based on syntheses of both individual studies and reviews, Mortensen et al [31] and Høgelund [32] concluded that interventions that encompass early identification of participants, multidisciplinary cooperation, and communication with and modifications at the workplace provide benefits in terms of reduced sickness absence. Accordingly, the most recent guidelines from the British National Institute of Clinical Excellence (NICE) recommend early, multidisciplinary, and workplace-based interventions to promote RTW.

It is, however, worth noting that the effect sizes across studies are relatively small. One large review included in Høgelund's synthesis estimates the median reduction in sickness absence to be between 0.32 and 3.20 days per month [33]. Høgelund [32] also points to the possibility of publication bias, whereby studies with negative results are underrepresented in the available literature.

In response to the increase in sickness absence due to MHPs, interventions aimed specifically at beneficiaries with MHPs have proliferated in the past decade or so. Most of these include some form of therapy (pharmacological or psychological) to reduce symptoms and enhance participants' coping skills in relation to work [34-37]. Some also include cooperation with the workplace, or promotion hereof [34, 38-40]. While interventions focusing only on treatment of the MHP have not succeeded in reducing time to full RTW [35-37, 41, 42], interventions involving the workplace have shown more promising results [34, 38-40].

A recent synthesis of the international literature, a white paper, has concluded that many of the elements found to be effective in the promotion of RTW sickness absence due to musculoskeletal problems, such as early identification, thorough assessment of functional impairments, modified work tasks, close cooperation with the workplace, and coordinated involvement of relevant stakeholders, are also likely to be beneficial in relation to sickness absence due to MHPs [2]. But so far, only a few studies have tested early, multidisciplinary and coordinated interventions for sickness absence beneficiaries with MHPs.

In a non-randomised, controlled trial, Braathen et al. [43] evaluated the efforts of a multidisciplinary rehabilitation team that assessed participants's health status and RTW-prospects and created individual rehabilitation plans for Norwegian employees on sickness absence. The plans included combinations of physical activity, relaxation training, psycho-education, and cognitive behavioural counselling, all provided by the rehabilitation team. Coordination with social insurance officers and employers was also part of the four-week programme. After four months, in the intervention group, compared to the reference group, self-rated work ability had improved to a larger extent, and the number of people back at work was higher. However, as the study did not distinguish between the reasons for absence – ie. musculoskeletal or psychological problems - the intervention's effect among beneficiaries with MHPs is unknown.

Vlasveld [44, 45] et al. carried out a randomized, controlled trial (RCT) of a collaborative care model, in which an occupational physician had the role of a coordinating care manager for Dutch sickness absence beneficiaries with major depressive disorder. In cooperation with the participant's employer and a psychiatrist, the care manager offered problem solving therapy, manual guided self-help, a workplace intervention and psychiatric medication. Recipients in the intervention group did not differ from the control group in terms of time to remission of depression or time to RTW.

Not only is the available evidence on multidisciplinary and coordinated interventions for sickness absence beneficiaries with MHPs scarce, contextual differences also make international comparisons of trial findings problematic [22]. Practitioner roles, statutory requirements and job security during sickness absence are some of the potentially influential factors that differ between countries. For example, in Denmark, the municipalities bear the main responsibility for supporting and rehabilitating sickness absence beneficiaries. In several other EU countries, such as the Netherlands and the United Kingdom, this responsibility lies mainly with employers. As a consequence, coordination of efforts between stakeholders – i.e. municipal benefit administration offices, health care providers, and employers – is perhaps particularly important in a Danish context. When looking at the recent Danish studies of interventions that have elements of multidisciplinarity and coordination, however, the results are not clear.

In a non-randomised, controlled trial, Lander et al. [46] recruited sickness absence beneficiaries with mental distress to an intervention that included a medical consultation, individual consultations with a psychologist and close contact with a social worker. The psychological consultations focused on activating and supporting the patients efforts to adopt an action-oriented approach to their problems. The social worker was responsible for giving feedback to the GP, and the employer as well as providing the participant with advice and support regarding the legal and practical aspects of RTW. When compared to a group of similar beneficiaries from a neighbouring municipality, the intervention group did not show enhanced RTW.

In another non-randomised, controlled trial Netterstrøm & Bech [39] tested a multidisciplinary intervention among sickness absence beneficiaries with work related stress. The intervention did not have a particular focus on coordination of stakeholder efforts, but included 1) a clinical

examination, therapeutic sessions to reduce stress and enhance coping; 2) evaluation of participants' workload and tasks; 3) physical exercise; and 4) a psychiatric evaluation when indicated by depression test scores. The intervention-group showed an increased rate of RTW in the first four months after baseline, but this effect had disappeared twelve months after baseline.

In a more recent study by Jensen [47], Danish sickness absence beneficiaries with either musculoskeletal problems (67%), MHPs (17%) or both (16%), were offered a work disability diagnosis interview [48], which includes a medical examination, a questionnaire and a structured interview about the person's work and private situation. The resulting rehabilitation plans recommended activities, such as physical exercise, ergonomic education, round table discussions at the workplace, and brief cognitive behavioural therapy. As a whole, the intervention group had higher odds of RTW after two years compared to a reference group of similar beneficiaries, but as no distinction between the reasons for absence was made, the specific effect on beneficiaries with MHPs remains unknown.

Two years after initiation of the present study, the large scale Danish National Return to Work Programme (Danish: Det Store TTA- (Tilbage til Arbejde) Projekt) tested a model, which included early identification, multidisciplinary assessment, and the education and instatement of RTW-coordinators as part of a multidisciplinary team in 21 Danish municipalities [49]. The RTW-coordinators were responsible for developing individual RTW-plans, and for coordinating the different RTW activities with an emphasis on close collaboration between the RTW-team and external stakeholders (e.g employer and general practitioner (GP)). Activities included workplace meetings, work modifications, workability training, psycho-education, ergonomics training, physical exercises, and stress and pain management. Individual randomisation was possible in three municipalities, and the results here were mixed. In one municipality the intervention group showed an increased rate of RTW, but this effect was not found in the other two municipalities, one of which even showed a tendency towards a reduced rate of RTW[50]. A similar result was found with regard to time to self-support [51]. The reason for sickness absence did not appear to influence the outcome, but a qualitative study of the participants' experiences suggested that the success of the intervention among participants with MHPs was dependent on the quality of their interpersonal relation with members of the RTW-team.

In sum, current guidelines recommend early, multidisciplinary and coordinated interventions to promote RTW among beneficiaries with musculoskeletal problems [52], and a white paper has concluded that this type of intervention is also likely to be effective in relation to beneficiaries with MHPs [2]. However, in light of the available evidence, it appears that more research into interventions aimed at this target group is needed before any consensus regarding an effective model can be reached.

Evaluation of RTW-interventions

Evaluation can be defined as a systematic collection of info rmation, that forms the basis for the creation of knowledge about the implementation, organisation and effects of specific efforts [53]. According to Stake & Schwandt [54], the main purpose of an evaluation is to provide a judgement that determines the value of an intervention. How to make this judgement legitimate, how to justify the judgement, and consequently how credible that judgement is, has been the topic of much discussion in evaluation theory literature [55]. It has been put forward that too many evaluations are never actually used in decision making, simply because their claims and arguments are not credible or relevant to their audiences [56]. According to House [56] credibility and relevance can only be achieved by providing explanations that are suited to the needs of the audience. In other words, to be useful, an evaluation must answer the questions of importance to the stakeholders of the intervention, i.e. those persons, organisations, or agencies that stand to gain or lose from the intervention's outcome.

Young et al. have proposed a model identifying the stakeholders involved in RTW and their motivations, interests and concerns [57]. An adaptation of this model is depicted in figure 2. The model can be used to tailor the evaluation to the needs of the relevant stakeholders, thus making the evaluation as useful as possible.

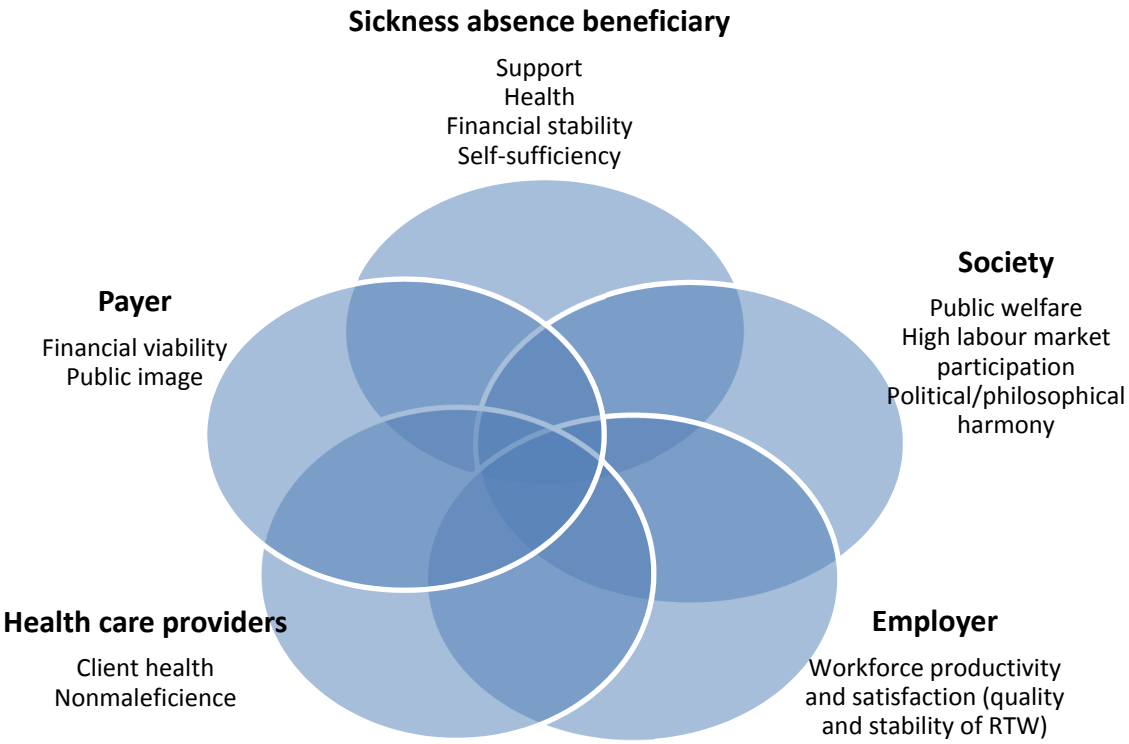

Figure 2. Stakeholders of an RTW-intervention and the outcomes relevant to them (adapted from Young et al. 2005 [57]

Choice of outcomes

The shared goal for everyone involved in a RTW intervention is obviously that the sickness absence beneficiary returns to work. But as figure 2 illustrates, there is a multitude of concerns relating to the way RTW is achieved, all of which translate into different RTW-outcomes. RTW outcomes are measurable characteristics of workers' RTW status or experiences (Young et al 2005). The published literature contains many different ways of defining RTW as an outcome, some of the most common being labour market status at a single time-point [58], degree of sickness absence at single time-point [59], time until first part- or full time RTW [60], time until RTW without relapse [61], and accumulated sickness absence over a given period [62].

While labour market status at a single time point allows for a relatively simple study design and data analysis, it does not account for events occurring in the intermediate time period, for example failed attempts of RTW. Time to first RTW (partial or full) is a useful indicator of the duration of disability if the main concern is the cost of sickness absence benefits. However, for measuring

intervention quality, time to first RTW in itself is not a sufficiently sensitive measure [63]. A more thorough evaluation calls for measures that capture both the timeliness and the stability of RTW, such as time to RTW without relapse within a given time period. A person who achieves complete and stable RTW may be seen to have recovered their psychological and physiological performance, be functioning independently and contributing financially to their family and society [64]. As such, complete and stable RTW is arguably the most desired outcome following an intervention.

Using accumulated sickness absence as an outcome, in addition to time to first RTW and the stability of RTW, gives an indication of an intervention's effect on participants ability to cope at work. However, as MHPs are more strongly associated with presenteeism than absenteeism [65], and with greater loss of productivity than somatic illness [66], using only measures based on sickness absence may underestimate the true duration of disability. Including measures that indicate changes in general health, mental health and work ability is likely to provide a fuller picture of intervention quality, particularly in the context of MHPs.

Evaluation design and methodology

Evaluation of the merits of an intervention or treatment has traditionally been conducted within an experimental paradigm. Experiments are designed to uncover whether or not certain changes occur as a result of the manipulation of some important variable, for example, the administration of a particular treatment. Essentially, they are tests of cause-and-effect hypotheses. The experimental paradigm has its roots in natural science laboratories, where temporal priority, control over variables, and random allocation of subjects to treatment or control groups (the minimum necessary requirements for establishing causal connections) are generally feasible [67].

However, with regard to treatments implemented outside the laboratory, such as public health interventions, researchers have long realised that the traditional experimental paradigm needs to be expanded to take account of the complexity of interventions and the social context they are implemented in. The effects of an intervention are functions of 1) the intervention theory, 2) the way this theory is implemented, 3) the people who receive it, and 4) the context within which this all takes place [68]. Evaluations should thus consider all four elements. If one does not pay attention to how an intervention is conducted and received, one cannot make any valid claims about its effects, replicability, or construct validity [69]. Furthermore, awareness of the theory that informs the intervention design, and of possible deviations from this theory in the implementation, is crucial to capturing and understanding both intended and unintended outcomes [70].

Thus, the task of evaluating a RTW-intervention requires analyses of the intervention theory and its implementation, its reception and context, as well as of the intervention's effects. The tools for this task are not readily found within the traditional experimental paradigm that focuses on controlled and quantifiable data. Thus, modern intervention evaluation theory and practice takes a pluralistic stance, encompassing a variety of perspectives, analytical dimensions, methods, data and social actors [71]. Many authors in the field advocate mixing quantitative and qualitative methods to obtain a broader and deeper knowledge of the phenomena at hand. While quantitative research

offers relatively compact, standardised and generalisable information, qualitative research is more likely to capture unique and contextual information. Combining methods makes it possible to capitalise on each component's strong points [72].

As previously mentioned, the ultimate purpose of an evaluation is to aid decision making, and to do so it must make a credible argument for the judgment it provides. Basing the judgment on sound methodology is prerequisite for achieving credibility, but a study's methodological rigour is mostly dependent on researcher skills, resources and opportunities. Although evaluators should strive for the highest possible level of rigour, the choice of design is often limited by allocated resources and the competing concerns of intervention stakeholders [73]. Thus, Braverman et al. [73] assert that "*Rather than following generalized predetermined standards, decisions about rigor should be based on the specific organizational context, information needs for the evaluation, and anticipated benefits and costs of available methodological alternatives" (p.71).*

In evaluation research, the RCT is generally considered the "gold standard"[74]. A key feature of the RCT is the randomised allocation of participants to either an intervention group or a control group, with the purpose of eliminating bias caused by pre-existing group differences. The RCT can be used to ascertain whether, all other things being equal, a particular causal mechanism (intervention) is effective under optimum conditions [75]. However, in community settings, RCTs are often unfeasible because of costs, entrenched practice patterns, or local beliefs about the intervention's working mechanism [76, 77]. For example, policy makers or providers may believe that the intervention has particular value for specific individuals, and thus oppose random allocation because it prevents them ensuring that the "right" people receive the intervention. Similarly, potential recipients may have preferences and oppose randomisation. Opposition towards random allocation may also arise because policy makers or providers believe an intervention is beneficial and no one in need should be denied it, which makes the concept of control groups appear unethical [74].

In situations where random allocation is unfeasible, design alternatives exist that increase the validity of results under the given constraints, raising the credibility of the conclusions drawn. For example, it may be possible to employ a matched control group and/or post hoc adjustment for potential confounders. However, these options cannot account for unmeasured or imperfectly measured confounders. In the absence of a matched control group, comparing parameter changes in the intervention group to changes in the same parameters in the general population may be an option, although, again, confounding and regression towards the mean may introduce bias [74].

Analytical strategies to account for confounding in non-randomised designs

The purpose of random allocation is to achieve balance between intervention and control groups in terms of all factors that may influence the outcome of interest. In non-randomised trials with control groups, balance can be approximated through various analytical strategies. Some of the most common strategies are stratified or multivariable regression, in which potential confounders are used to divide participants into subgroups or included as explanatory variables, respectively. If a

large number of confounders are involved and the data are limited, propensity scores are an option, in which each participant's estimated probability of receiving treatment, given their combination of measured, individual characteristics (confounders), is used as the predictor in a regression analysis [78].

The standard techniques of controlling for measured confounding require that the potential confounders are identified and measured accurately. In research on public health interventions, and particularly those involving multifactorial processes, such as RTW, accurately measuring all possible confounders is an impossible task. Instrumental variables (IVs), an analytical technique originating from econometrics, proposes a solution to this problem by mimicking randomisation and eliminating the need to measure confounders [79, 80]. An instrumental variable is one that predicts treatment but is unrelated to the outcome of treatment. This variable is then used as a proxy for the confounded treatment variable. For example, the average price of cigarettes in different American states has been used as an IV to obtain an estimate of the effect of smoking on physical functioning, unbiased by confounders like lifestyle factors or reverse causation [81]. Although the IV technique is an attractive choice for determining causality in non-randomised trials, it should be noted that due to the 2-stage construction of the IV-model and the imperfect prediction of treatment by the IV, these analyses are generally less efficient and have wider confidence intervals than conventionally adjusted analyses [82]. Nevertheless, they can be useful and informative supplements that can either strengthen or weaken the conclusions drawn from conventionally adjusted analyses.

The present study

As outlined in the section on RTW-interventions, the current consensus is that a multidisciplinary and coordinated intervention model is the most effective to for sickness absence beneficiaries with musculoskeletal disorders [31, 32, 52]. When the present study was initiated, the available evidence on the effectiveness of this model among beneficiaries with MHPs was very scarce [43] and no studies had been published from a Danish context.

In 2003 the Coordinated and Tailored Work Rehabilitation (CTWR) model was developed in Denmark [83], originally with the purpose of rehabilitating employees on sickness absence due to musculoskeletal disorders. In one trial, the model showed promising results in the form of reduced sickness absence when compared to conventional, municipal case management [62, 83]. Subsequently, the model was expanded by a private rehabilitation company to include beneficiaries with MHPs. In the fall of 2007, the municipalities of Copenhagen, Greve, Solrød and Lejre (from here on referred to respectively as Copenhagen and Zealand) were granted financial support from the Danish Prevention Fund (Forebyggelsesfonden) to offer sickness absence beneficiaries with MHPs the CTWR-intervention. The National Research Centre for the Working Environment (NRCWE) was commissioned to conduct an external evaluation of the projects. To the best of my knowledge, the two projects (Copenhagen and Zealand) constitutes the first implementation of the CTWR-model among sickness absence beneficiaries with MHPs in the world.

Inspired by the Sherbrooke model [27, 28], the CTWR-model is based on the "Readiness for Return to Work"-framework developed by Franche & Krause [84]. This framework describes five stages on the way from sickness absence to RTW, each stage representing changes in motivation and self-efficacy [85]. It also incorporates the concept of "Therapeutic return to work" [86], which holds that work can be therapeutic and should be used as part of the rehabilitation process. This is done by a gradual return to modified duties, which are incrementally adjusted to suit the progress of the worker. The CTWR-model consists of a systematic identification of reasons behind the sickness absence beneficiary's functional limitations, followed by tailored, prioritised and progressive rehabilitation efforts [83]. A more detailed description of the intervention is presented in the "Methods" section.

Aims of the thesis

The aim of this thesis is to assess, understand and explain the effects of the CTWR-intervention for sickness absence beneficiaries with MHPs, and in doing so, to employ and develop suitable evaluation methods applicable to other, similarly complex interventions. More specifically, I seek to answer the following questions:

1. How was the intervention implemented and received in the four different settings?

2. Did the intervention have positive effects in terms of:
   a) reduced time to RTW
   b) reduced sickness absence
   c) improved labour market attachment
   d) increased stability of RTW
   e) increased workability
   f) symptom reduction
   among sickness absentees with MHPs?

3. What can be learned from the evaluation of this specific intervention in terms of useful methods and outcomes for the evaluation of similar, complex interventions?

The answer to question 1 can be found in paper 1 and 3. The answer to questions 2a-c can be found in paper 2, and the answer to question 2d is found in paper 4. Question 2e and 2f and 3 are addressed in the results and discussion sections of this thesis only.

Theoretical foundation of the thesis

Based on the ICF-model, Nieuwenhuijsen [87] has proposed a model for RTW among employees with MHPs. This model assumes that a reduction in negative health symptoms leads to an improvement in work ability, which in turn promotes RTW. The model builds on the ICF-model presented in figure 1, and highlights the influence of environmental and personal factors at all stages of the process. The present study is based on this biopsychosocial understanding of RTW, and uses Nieuwenhuijsen's model as a conceptual framework for assessing the effect of an intervention (environmental factor) on the negative health symptoms (functional limitations), reduced work ability (activity limitation) and RTW of participants.

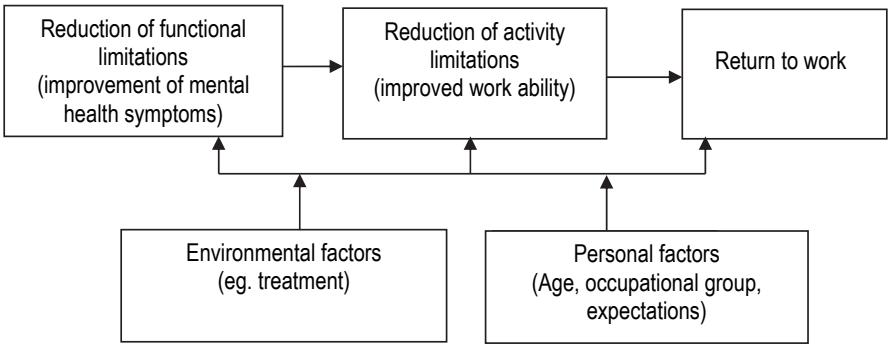

Figure 3: Model for RTW among employees with MHPs, adapted from Nieuwenhuijsen [87]

Methods

Legislative context

The Danish sickness benefit scheme covers wage-earners, self-employed and unemployed people, and no distinction is made between work-related and non-work related sickness. At the time of the study, employers paid full wages for the first three weeks of absence (as of January 2012 it is the first 30 days). After this period, employers can claim compensation for part of the wages from the local municipality for a maximum of 52 weeks within a period of 78 weeks. If general staff cutbacks are made, or if the absence exceeds 120 days, the employee can be dismissed while sick-listed.

Municipal social insurance officers (SIOs) have a legal responsibility for evaluating and monitoring beneficiaries. The SIOs must interview all new beneficiaries within the first eight weeks of absence and evaluate their prognosis for RTW with the aid of relevant medical, social and vocational information. Regular follow-up assessments (every fourth week) must be conducted for beneficiaries at risk of prolonged absence from work. At the initial interviews - at which recruitment to the CTWR-intervention took place - the SIOs primarily rely on the information given in a questionnaire filled in by the sickness absence beneficiary, which does not necessarily provide a medical diagnosis. Medical information is subsequently requested in two thirds of all cases, which leaves one third of the sickness absence in Denmark self-certified [88, 89].

The intervention: Coordinated and tailored work rehabilitation (CTWR)

The CTWR-model consists of a multidisciplinary and phase-specific intervention aimed at matching the rehabilitative efforts with the current needs of the individual sickness absence beneficiary, with the concurrent involvement of all relevant stakeholders. The CTWR-intervention was implemented jointly by the municipalities and the private rehabilitation company. SIOs in the municipal job centres were responsible for recruitment of participants, while the rehabilitation company offered the following efforts: 1) a work disability screening (WDS) conducted by a multidisciplinary team, to assess disability and functioning, and barriers and resources for RTW in accordance with the ICF; 2) the formulation of an action plan for RTW, including activities, such as psycho-educational sessions, psychological consultations, and physical exercise; 3) the implementation of the RTW- plan, with regular updates according to the individual's current situation. The intervention was planned to last for a maximum of 12 weeks for each participant. The stated aims of the intervention was to facilitate an early RTW, reduce sickness absence, and reduce symptoms of MHPs among participants when compared to conventional, municipal case management.

Conventional case management (CCM)

On the basis of the initial interview within the first eight weeks of sickness absence, SIOs are obliged to initiate efforts to improve or retain the beneficiaries' labour market attachment, such as granting supplementary benefits while resuming work on reduced hours, wage subsidised job-training, or further education. All Danish residents have free and unlimited access to a general practitioner (GP). Psychiatric treatment in hospitals is free upon referral from a GP, however lengthy waiting lists are common [90]. Treatment by private psychotherapists is subject to patient charges.

Study design

I used a theory-driven [91] mixed-method evaluation design. Based on the intervention protocol and interviews with the CTWR-team and its management, I developed a theoretical model of the intervention's working mechanisms. This model was then used as a framework for collecting, analysing and integrating quantitative and qualitative data to answer questions about the intervention's implementation and effects. The model is illustrated in figure 4. The core elements, *early identification of participants, multidisciplinary assessment, focus on barriers and resources, coordination of stakeholders, and regular adjustments* of the plan, are presumed to lead to less *severe problems* among participants, a *holistic view of the functional limitations*, an *individually tailored plan*, a *coherent process* and *flexibility of efforts* that are continuously tailored to the needs of the individual. These factors are in turn expected to facilitate *quick assessment* and *targeted and thorough rehabilitation*, which should lead to *early and sustainable RTW*, and *symptom reduction*.

According to Caracelli & Greene [92], theory-driven evaluations fall under the heading of *holistic* mixed-methodology. The analytical design, however, lies closer to what Caracelli & Greene [92] call a mixed-method *component* design, as the results of qualitative data analysis is used to enhance the understanding of quantitative results and vice versa, rather than the two data types being completely integrated. The different methods remain discrete throughout the inquiry, and the combining of methods is conducted at the level of interpretation and inference. The underlying premise of mixed-method inquiry is that each method and its associated paradigm offers a meaningful and legitimate way of knowing and understanding [93]. The purpose of combining the two methods is to generate deeper and broader insights into the topic at hand, in order to qualify conclusions that respect a wide range of interests and perspectives [93].

As an external evaluator, I was responsible for the gathering, analysis and interpretation of data and had an influence on the study design in terms of data sources and collection methods. The final decisions regarding the recruitment procedures and the choice of quasi-randomisation were in the hands of the municipalities. In the following sections, the study design is explained in more detail.

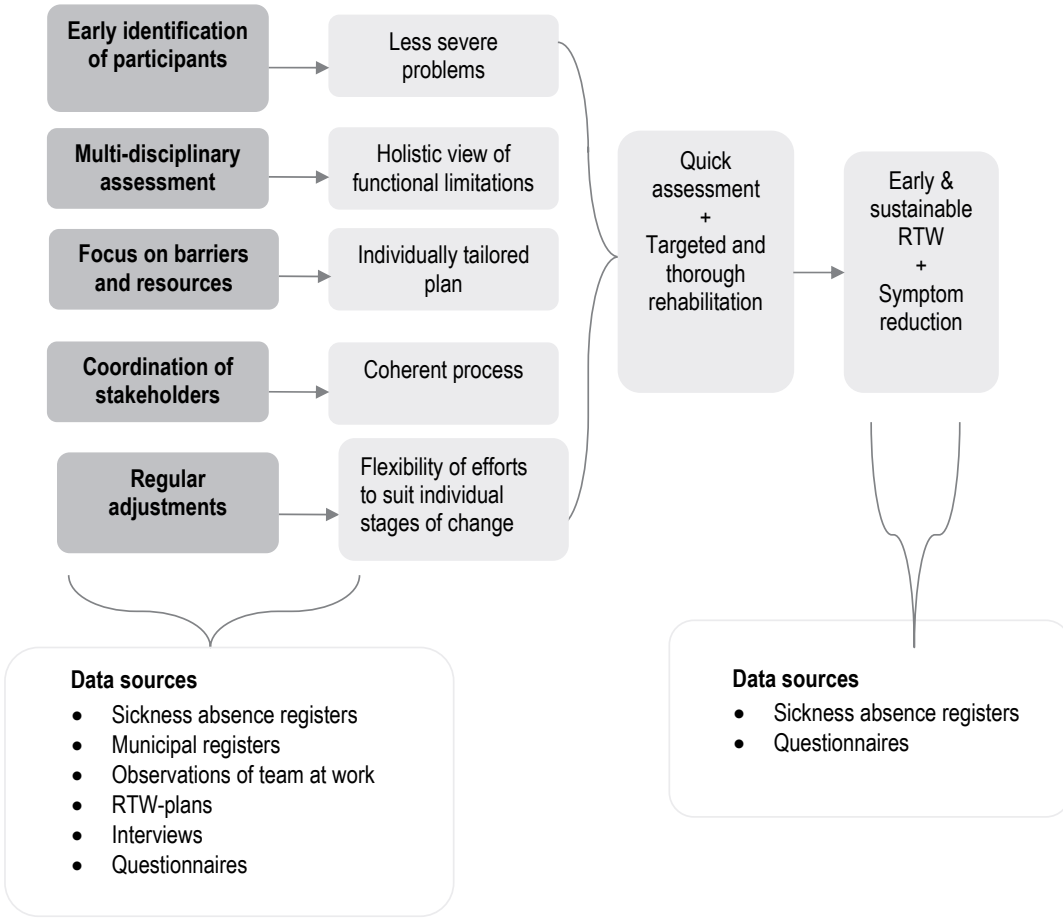

Figure 4: A theory of the working mechanisms of the CTWR-intervention

Data sources

The core of the present study is a process- and an effect evaluation of the intervention as it was implemented in four different settings. The process evaluation is based on data collected throughout the study period, whereas the effect evaluation is based on data collected according to a pre-post quasi-experimental design. Participants receiving the CTWR-intervention were compared to participants receiving conventional case management (CCM) on relevant parameters measured before and after receiving their respective 'treatments'. The process evaluation utilises both quantitative and qualitative data, whereas the effect evaluation relies solely on quantitative data.

Data for the process evaluation come from interviews with the CTWR-team (n=4), municipal SIOs (n=5), and participants (n=20), observations of the intervention (n=6), case documents from the intervention (n=109), administrative records from the jobcentres, and a two-waved questionnaire survey among participants. Data for the effect evaluation come from administrative records from the jobcentres, the questionnaires, and records from national registers of social transfer payments (DREAM and RSS [9, 94]).

Interviews

The CTWR-team and its management were interviewed on four occasions, each lasting approximately 90 minutes. The municipal SIOs were interviewed on five occasions, each including between three and six SIOs and lasting approximately 90 minutes. Participants who had completed the intervention were invited by post to share their experiences in an interview. Twenty participants accepted the invitation and were interviewed for approximately one hour each. All interviews were semi-structured, audio-recorded and transcribed verbatim. Subsequently, the data were coded thematically with the software NVIVO, version 8 [95, 96].

Observations

The CTWR-team was observed at work on six occasions during the team conferences, where cases were discussed and RTW-plans developed. Each conference lasted approximately three hours. Two researchers observed each conference, took notes according to an observation template developed for the study, and subsequently discussed and aligned their notes.

Case documents and administrative records

The case documents from the intervention were in the form of RTW-plans and follow-up notes, which were analysed in terms of structure and content. Administrative records from the jobcentres contained personal information on participants recruited to the study, as well as date of recruitment and first day of sickness absence.

Questionnaires

The baseline questionnaire contained items on socio-demographic characteristics (gender, age, socio-economic position, marital status, cohabitation) employment situation, details related to the sickness absence, RTW-expectancy, current work ability, general health perception, and symptoms of depression, anxiety, and somatisation. In addition, the follow-up questionnaire contained items assessing participants' experiences during the intervention period (eg. contact with the CTWR-team, satisfaction with the handling of their case). RTW-expectancy was measured by asking respondents to rate their chances of returning to work within six months, with 0 representing the lowest and 10 representing the highest chance. I used an item from the MOS short-form health survey (SF-36) [97] to measure general health perception. The item asks respondents to rate their general health on a five-point scale from "excellent" to "poor". Anxiety and somatisation symptoms were measured by subscales from the Symptom Checklist 90, revised version (SCL-90-R) [98], and depressive symptoms with the Major Depression Inventory (MDI) [99]. Work ability was measured

by asking respondents to rate their current work ability on a scale from 0-10, with 10 indicating their best possible work ability.

National registers
We linked participants' social security number with two National registers: the Danish register of labour market marginalisation, DREAM [9], and the Danish register of sickness absence compensation and social transfer payments (RSS) [94]. The two registers contain much of the same information, but the RSS is an updated and comprised version of the DREAM, providing information on sickness absence benefits on a daily rather than a weekly basis, thus allowing for greater precision in the estimation of sickness absence length.

Outcomes

Implementation quality
The assessment of the implementation of the intervention was conducted following the guidelines for process evaluations described by Saunders et al. [100]. These guidelines recommend focusing on the recruitment, reach, fidelity, dose delivered, dose received, and context of the intervention. The specific research questions, their operationalisation and measurement are presented in Table 1, paper 1, appendix II.

Time to RTW
Time to RTW was measured from the first day of sickness absence. The transition from receiving sickness absence benefits to being self-supported according to the national registers was the operational definition of RTW. Participants who changed from receiving sickness absence benefits to receiving unemployment benefits were regarded as not returned to work. Participants were censored from the analyses in the event of death, emigration, maternity leave, transition to any pension or education benefits, or at the end of follow-up, whichever came first. Each participant was followed for 52 weeks, which is the general maximum period a person can receive sickness absence benefits in Denmark.

Cumulative sickness absence at follow-up
Cumulative sickness absence was calculated as the number of days spent on sickness absence in year one and two after the index day (first day of sickness absence). Group comparisons were made with the Mann-Whitney U-test.

Labour market status at follow-up
Participants' labour market status was ascertained from the national registers at 52 weeks and 104 weeks after the index day. The categories used were: self-supported, receiving sickness absence benefits, receiving unemployment benefits, and receiving disability benefits. Participants who were registered as receiving support for further education, old age pensioning, maternity leave, or who had emigrated or died, were categorised under the heading 'Other'.

Recurrent sickness absence and unemployment after RTW

Among the participants who returned to work within the first year, the risk of returning to receiving sickness absence benefits for a period of more than three weeks, or transitioning to receive unemployment benefits during the following year, was assessed by linking to the RSS.

Changes in health-related variables

The questionnaire allowed for the assessment of changes in the health related variables general health perception, work ability, and symptoms of depression, anxiety, and somatisation. Measures were taken at the time of recruitment to the study and again nine months later.

Procedure

Recruitment of participants

Recruitment to the intervention was done by SIOs in municipal jobcentres, which are the local authorities responsible for the administration of sickness absence benefits. The following inclusion criteria were set by the CTWR-team:

- employees aged 20-60 years
- sick-listed 4-12 weeks
- Sick-listed due to a common MHP (ICD-10: F30-F48, and related conditions not specified in ICD-10, e.g. burnout)
- no co-morbid psychotic conditions.

In Copenhagen, the SIOs called in new sickness absence beneficiaries for a personal interview Monday through Thursday. During this interview, the SIOs assessed the beneficiary's eligibility for the intervention according to the criteria. Eligible beneficiaries interviewed on a Monday or Tuesday were invited to participate in the study as part of the CTWR-group, while those interviewed on a Wednesday or Thursday were invited to participate as part of the CCM-group.

All participants were asked to complete the baseline questionnaire and return it to the NRCWE in a pre-stamped envelope. Additionally, the SIOs completed a short form with contact details for the participant, which was collected by a researcher for registration to allow the postal administration of the follow-up questionnaire nine months later.

In the Zealand municipalities, the interview between SIO and sickness absence beneficiary could take place either personally at the jobcentre or over the telephone. As in Copenhagen, the SIO assessed eligibility based on the criteria set by the CTWR-team, but since the number of eligible beneficiaries in these municipalities was substantially smaller than in Copenhagen, everyone eligible were offered to participate in the CTWR-group, until the weekly quota was filled (the quota varied, but averaged two per week). Any additional, eligible beneficiaries were invited to participate as part of the CCM-group. Administration of the baseline questionnaire was organised as in Copenhagen, except that participants recruited over the telephone received the questionnaire by post.

Statistical analyses

Our analyses followed the principle of intention-to-treat (ITT), including those participants who were accepted for the intervention by the CTWR-team, regardless of whether or not they completed the intervention. Furthermore, we only included participants on full time sickness absence from a full time job. Baseline characteristics of participants in the two groups were compared using the Chi-squared test of comparable distributions, the Student's t-test, and the Mann-Whitney U-test. All

analyses were conducted in SPSS, version 20.0 (IBM Corp., 2011), and SAS 9.2 (SAS Institute Inc., 2008).

Time to RTW

The median time to RTW was estimated with Kaplan-Meier survival tables, and Cox proportional hazards regression was used to estimate hazard ratios (HR) for RTW and 95% confidence intervals (95% CI). Participants still on sick leave at the end of year one (after 52 weeks of sickness absence) were right censored (i.e. not RTW).

To control for confounding in the Cox proportional hazards model, two strategies were employed: a multivariable adjustment for baseline variables, and an IV-analysis. In the multivariable adjustment, model I was adjusted for the register-based variables age, gender, sickness absence at recruitment, and sickness absence in the year previous to recruitment. Model II was further adjusted for variables retrieved from the baseline questionnaire and was therefore only applied to participants who completed the questionnaire without missing values on these variables. These variables were occupational group, employment status, reason for sickness absence, symptoms of anxiety, somatisation and depression, general health, work ability, and RTW-expectancy. The confounding variables were chosen on the basis of their previously shown association with sickness absence duration [101-104].

The study design in Copenhagen provided a strong instrument for the IV-analysis. The weekday participants were recruited to the study was an exogenous variable predicting group allocation (Monday-Tuesday=CTWR, Wednesday-Thursday=CCM). It is unlikely that day of recruitment was unrelated to the time to RTW, except through its effect on group allocation. As such, it could be used to obtain an unbiased estimate of the effect of treatment on RTW [82]. A logistic regression provided the predicted probability of receiving CTWR based on recruitment day, which was then used as a continuous predictor of time to RTW in a Cox proportional hazards model with robust standard errors, not including covariates.

Labour market status at follow-up

Group comparisons of labour market status at the end of year one and year two were made with logistic regression analyses, adjusted for age, gender, sickness absence at recruitment, and sickness absence in the year previous to recruitment. Among respondents to the questionnaire, the analyses were repeated with the inclusion of employment and health related variables.

Cumulative sickness absence at follow-up

The sum of days spent on sickness absence in year one and year two was calculated for each participant. Group comparisons were made with the Mann-Whitney U-test.

Risk of recurrent sickness absence and unemployment

Recurrent sickness absence and unemployment were considered competing risks and the analytical guidelines of Varadhan et al [105] were followed. First, event-free survival time (time back at work

without experiencing either event) in the two groups was compared with a Cox proportional hazards model. Next, the cause-specific hazard (i.e. the risk of either outcome separately) based on treatment was assessed, also with a Cox proportional hazards model. All analyses were performed both with and without adjustment for confounders. Confounders were variables assumed to influence the stability of RTW, such as age, gender, previous sickness absence, previous unemployment, occupational group, self-rated general health, work-ability, and symptoms of poor mental health [103, 106, 107].

Changes in health related variables
Changes in health related variables were assessed within and between groups with the Wilcoxon signed-rank test, Student's t-test, and the Mann-Whitney U test.

Specificity analyses
To assess the extent to which the effects of the intervention were influenced by participants' characteristics, such as gender, age, occupational group, employment status, reason for sickness absence, general health perception, work ability or RTW-expectancy, these variables were included in interaction terms with the intervention variable. The outcomes considered were time to RTW (Cox proportional hazards model) and labour market status at follow-up (logistic regression).

Ethical considerations

The study was reported to and approved by the Danish Data Protection Agency (jnl.nr. 2008-54-0438). Approval by the Danish National Committee on Biomedical Research Ethics was not required for studies of this nature [30].

Results

Participants

Copenhagen

The SIOs in Copenhagen recruited at total of 242 participants, 152 to CTWR and 90 to CCM. Of the 152 CTWR participants, the SIOs failed to register 46 for the study; that is, the SIOs did not inform me about these participants and could not provide a recruitment date, which was needed for the IV-analysis. These 46 participants were only identified at the end of the study, when I checked my records against those of the CTWR-team. Moreover, the vast majority of these unregistered participants never received a baseline questionnaire. Due to the amount of missing data on these participants, they were not considered part of the effect-evaluation of the intervention.

To assess the extent to which the exclusion of the non-registered participants would bias results, they were compared to the registered participants in terms of sickness absence length, cumulative sickness absence at follow-up, and labour market status at follow-up. These analyses, none of which were adjusted for other covariates than gender, as other data were not available for the non-registered participants, showed that a smaller proportion of non-registered participants received sickness absence benefits at the end of year one. No other outcome showed a statistically significant difference (data provided in appendix III). The non-registered participants were included in the sample used for the process evaluation, as were other participants who were excluded from the register analyses, since this part of the evaluation did not require assessment of sickness absence length. Figure 5 depicts the flow of participants from recruitment to study sample in Copenhagen.

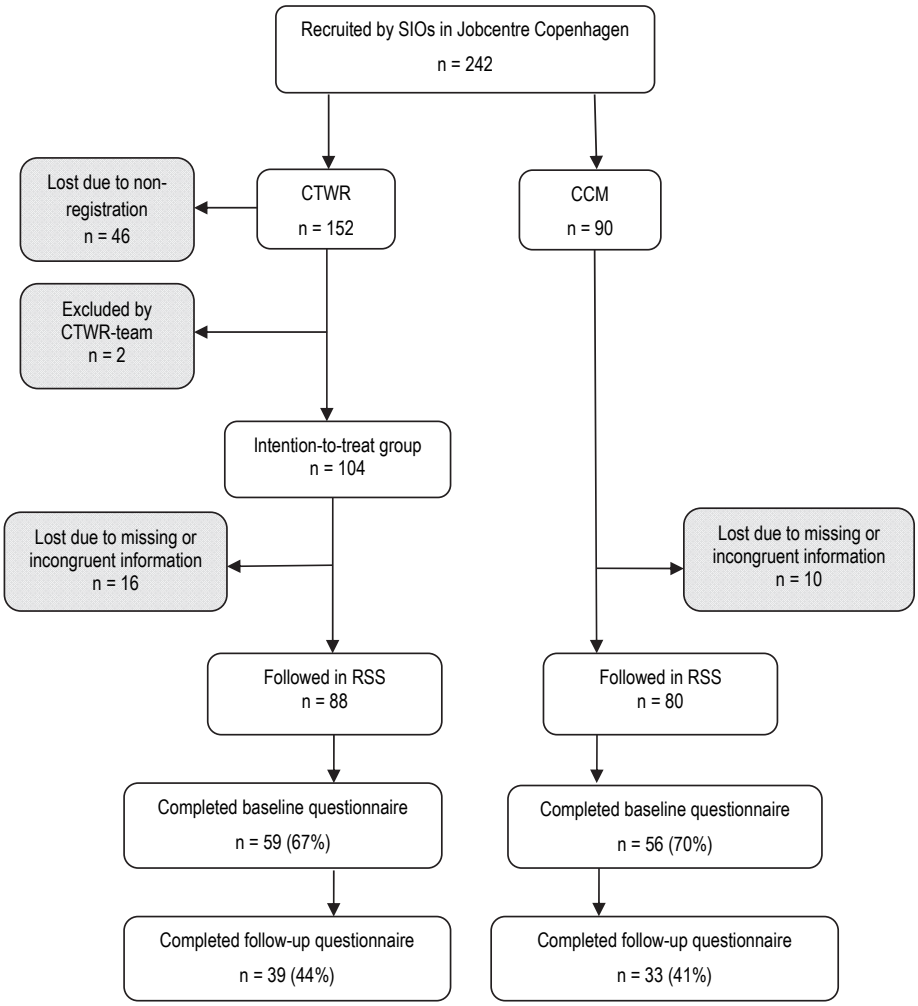

Figure 5: Flowchart of recruitment in Copenhagen

Zealand

In the Zealand municipalities, the SIOs recruited a total of 262 participants to the CTWR-group. Just over half of these (n=143) received a baseline questionnaire. According to the SIOs the inconsistent administration of questionnaires was due to a large part of recruitments taking place over the phone. The SIOs then had to send the questionnaires to participants by post, which they could not always find the time to do. At the end of the evaluation period, it became clear from administrative records that recruitment to the CCM-group had not been done according to the inclusion criteria. Most of those registered as part of the CCM-group were either not eligible for the study or they received other, unspecified treatment. Consequently, the establishment of a valid comparison group was not successful in the Zealand municipalities, and the evaluation here concerns only the implementation process. The analyses are based on the 255 participants accepted by the CTWR-team, as these represent the intended target group for the intervention. Of these, I was able to identify and follow 213 in the DREAM-register. The remaining 42 participants were excluded due to inconsistencies in the data (eg. not registered as a beneficiary, non-matching dates of absence). As the questionnaire response-rates were so low, I have chosen not to include the questionnaires as data sources. Figure 6 depicts the flow of participants from recruitment to study sample in Zealand.

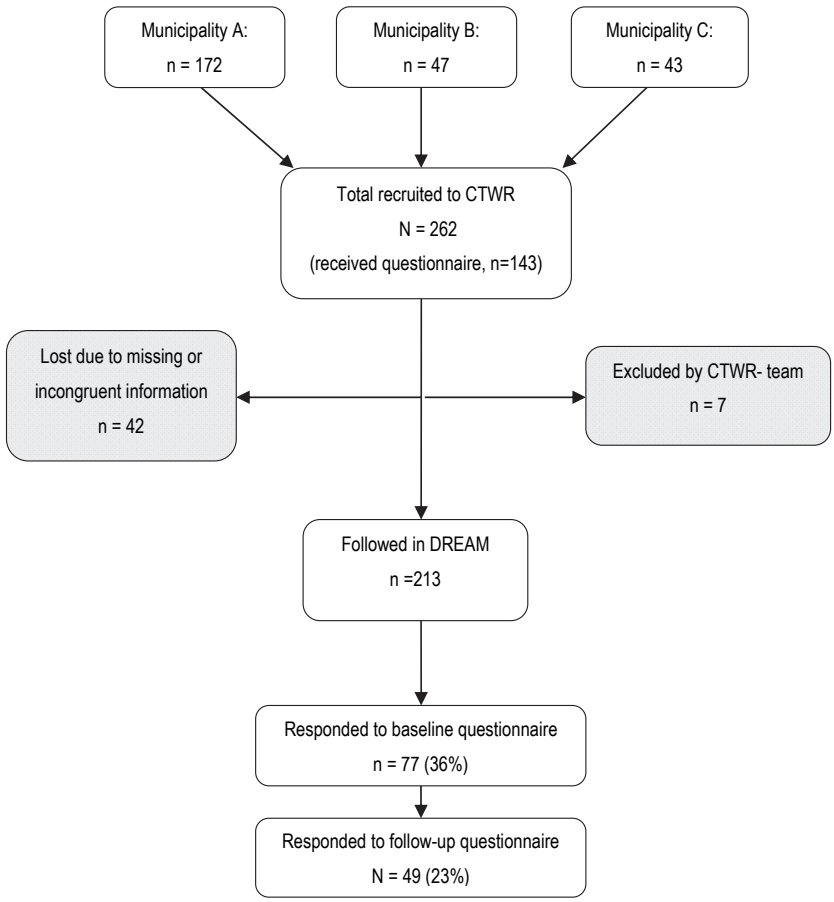

Figure 6: Flowchart of recruitment in Zealand

Implementation

Copenhagen

A detailed presentation of the implementation analyses in Copenhagen can be found in Paper 1 in appendix II.

Recruitment

Although the criterion was not clearly stated in the intervention protocol, the CTWR-team specified that the SIOs should only recruit participants with relatively mild MHPs. The SIOs did not use any clinical tools or expertise in their assessment, which were thus made on a layman basis unless the participant's GP had already provided a diagnosis. Interviews showed that the SIOs had difficulties assessing both type and severity of MHPs. Consequently the CTWR-team rejected some recruited participants due to the severity of their problems, and the estimated prognoses for RTW for participants often exceeded 12 weeks. Many participants had lost their job when they attended the WDS (21% of baseline responders) and thus were not eligible according to the original inclusion criteria. However, on the SIOs' request, the CTWR-team agreed to include newly unemployed participants.

The mean age of the recruited participants was 42 years (range: 21-68), one participant was older than 60 years. The most common cause of absence was stress-related disorders (57%), followed by depression (36%). The mean length of sickness absence at recruitment was 8.2 weeks, and 94% of participants were referred before 12 weeks (see table 2 in paper 1, appendix II).

Although most participants were recruited before their 12th week of absence, 20 (42%) of questionnaire respondents waited more than three weeks between recruitment and the WDS. Interviews revealed that waiting lists primarily occurred due to reduced capacity in the CTWR-team during the summer months, forcing a temporary reduction in the weekly recruitment quota. The change in quota was perceived as "unprofessional" by the SIOs and discouraged them from recruiting.

The interviews indicated that the recruitment procedure was influenced by the SIOs' knowledge and attitude towards the intervention. Each appeared to have their own strategy for assessing a potential participant's suitability for the intervention. Some followed the criteria strictly and others did not. The ability to assess both type and severity of MHPs is also likely to have varied between SIOs depending on their previous experience.

Reach

The intervention protocol set a target of 200 participants per year, so 152 participants in nine months is in line with expectations. Of the 152 people recruited, 29 chose to decline the offer, eight returned to work before start, three were excluded by the CTWR-team , one moved, and a further

five dropped out for reasons not registered. That makes the number of actual participants 106, which is approximately 30% less than expected.

Fidelity

The fidelity of the implementation was assessed with reference to the intervention model presented in figure 4. The element '*early identification'* is addressed under the heading 'recruitment and reach'.

Multidisciplinary assessment

The CTWR-team consisted of a social worker, a psychologist, a physiotherapist, and an occupational physician, as outlined in the protocol. Each team member assessed the participant according to their area of expertise, the social worker acted as a case coordinator responsible for gathering the individual assessments and communicating with the SIOs. Observations of the team conferences indicated that the multidisciplinary cooperation worked well. The team took a holistic approach when discussing individual cases and considered diverse issues, such as "change of diet", "day-care options for disabled child", "support from partner" and "relationship with co-workers".

Focus on barriers and resources in relation to RTW

Observations of the CTWR-team conferences indicated that the team had a clear focus on barriers and resources for RTW related to the participant's personal characteristics and environment. These were also the main structuring elements in the RTW-plans, which all contained the headings "*Total barriers in relation to RTW*", "*Total resources in relation to RTW*", "*Plan for improvement of functioning*" and "*Plan for RTW*", covering a summary of barriers and resources and pointing to activities to overcome or enhance them.

Coordination of stakeholders

External stakeholders in the RTW-process included external healthcare professionals, employers, and labour unions. To coordinate efforts, the CTWR-team contacted the relevant external healthcare professionals (e.g. psychologist/therapist and GP). If an external psychologist/therapist was involved, the contact usually resulted in a division of labour, with the CTWR-team's psychologist addressing work-related issues and the external psychologist/therapist addressing private issues. Coordination with GPs occurred mainly through sharing of the RTW-plan. Contact with employers only took place when the participant was still employed and agreed to have a third party involved. In such cases, which according to analysis of the RTW-plans constituted just under a fourth of all cases, a member of the CTWR-team participated in meetings with the employer and assisted in negotiating working conditions or terms of termination. Coordination with labour unions occurred mainly in cases of conflicts, where the CTWR-team would assist the participant in communications with the union representative.

Coordination with the SIOs took place through three channels: 1) regular meetings between the CTWR-team and a group of designated SIOs; 2) an on-line database for sharing of the case

documents created by the team (RTW-plans, monthly status briefs, and final reports); and 3) ad hoc contact regarding individual cases or practical issues concerning the implementation process.

Regular adjustments of the RTW-plan

The CTWR-team held follow-up conferences every fourth week to monitor participants' progress and discuss adjustments of RTW-plans. According to the team, this praxis made the rehabilitation process flexible and responsive to the participants' development.

Dose delivered

All participants included in the evaluation participated in a WDS, consisting of interviews with each of the CTWR-team members. The screening and subsequent team conference resulted in a RTW-plan, addressing barriers and resources for RTW. The most common activities listed in the plans were sessions with the team's psychologist and physiotherapist and help with planning of physical activities. In contrast, coordination of efforts with external stakeholders (including employers) appeared rarely in the plans (see table 3 in paper 1, appendix II). This finding is corroborated by responses to the follow-up questionnaire, where only 3% (one respondent) reported that a health professional had visited their work place.

The team followed all participants for 12 weeks, although the degree of contact varied. Every fourth week the team made a status brief on the participant's progress. All cases were concluded with a final report, summarising the participant's rehabilitation process and current situation. These documents were shared with the participant, their GP, and the SIOs, although sometimes with considerable delay (see "*Dose received*").

Dose received

Participants' experiences

In general, the interviewees welcomed the intervention as an offer of help. However, many participants experienced a long waiting period between recruitment and WDS, which was both surprising and frustrating to them. There were mixed experiences with the work disability screening; some found it the best part of the intervention, allowing them to tell their story and be "looked at from several angles", while others found the confrontation with so many unfamiliar faces in one day overwhelming and even unpleasant. The interviewees were most positive about the psychologist sessions and the courses in stress management.

The RTW-plans were often administered with delay to participants, who expressed divergent opinions of the plans - some expected more activities and/or more concrete details, while others were pleased that the plan contained an accurate description of their situation and was flexible to changes. In the follow-up questionnaire, 27% (ten respondents) reported that a clear plan was made for their RTW, and 43% (16 respondents) felt sufficiently informed of what was going on during the intervention. A few interviewees reported that they were recommended by the CTWR-team to return to their job later or with less hours than they had originally intended. Others mentioned that they had been encouraged to consider changing jobs.

The SIOs' experiences

The SIOs clearly expressed a need for RTW-efforts for people with MHPs, but they also stated that the intervention did not meet this need properly. Firstly, they found the inclusion criteria too narrow. It was difficult for them to find participants who had ties to the labour market (employed or newly unemployed), fit the criteria regarding reason for sickness absence, were not too severely ill, and were still at risk of prolonged sickness absence and thus in need of an intervention. Secondly, the SIOs were not satisfied with the documentation received from the CTWR-team. The documents did not specify the assessments made by the individual rehabilitation professionals but presented only a summary of the RTW-plan and activities completed. The SIOs requested more timely and detailed feedback on participants' status and progress, tailored to their needs in relation to the statutory reassessments. These requests were answered by the introduction of a more advanced document sharing system, to which the SIOs had direct access. The final interviews with the SIOs, however, did not indicate any improvements in satisfaction.

Thirdly, the SIOs found the estimated timeframes for RTW too long. Consequently, the SIOs felt that they and the CTWR-team were working towards different goals, i.e. a rapid RTW versus more comprehensive rehabilitation. This apparent discrepancy in goals was reflected in the survey, where only 38% (14 respondents) reported that the different stakeholders involved in the RTW-process agreed on what actions to take. Additionally, there was a general sense among the SIOs of being under-informed about the concrete content and goal of the intervention.

Context

The inadequate information flow from the CTWR-team to the SIOs may partly have been a consequence of the job centre's internal organisation. Originally, the group of SIOs who recruited participants were different from the group of SIOs following up on participants. This structure was changed at the end of the evaluation period, so that each SIO kept responsibility for their participants as long as they remained sick-listed. However, the change took place too late for the evaluation to capture any effects hereof. It is also likely that the implementation process was influenced by the global financial downturn in 2008, which may have affected the employment rates among participants.

Zealand

A detailed presentation of the implementation analysis in Zealand can be found in Paper 3 in appendix II.

Recruitment

All the interviewed SIOs expressed awareness of the inclusion criteria. Nevertheless, the criteria of a maximum of 12 weeks sickness absence was not consistently adhered to, as 25% of participants were recruited after more than 12 weeks. Furthermore, there was an average waiting time between recruitment and WDS of two weeks. Shortly after the initiation of the project, the CTWR-team and the SIOs agreed that sickness absence beneficiaries without a job should also be eligible, as these represented a particular challenge to the SIOs. The data show that 20% of participants were

unemployed at the time of recruitment. Table 1 in paper 3, appendix II shows participants' characteristics drawn from the DREAM-register. The majority (67%) were women and the mean age was 43 years (SD=9.8).

There were differences in the way in which the three municipalities defined the criteria of common MHPs. While SIOs in municipality B and C stated that they only recruited participants deemed to suffer from relatively mild MHPs, SIOs in municipality A also recruited participants seemingly troubled by more severe disorders. Consequently, as in Copenhagen, some participants were rejected by the CTWR-team due to the severity of their problems, and many of the accepted participants required more psychological support than initially anticipated.

Emergent inclusion criteria

Apart from the formal inclusion criteria set by the CTWR-team, the interviews showed that the SIOs used parameters, such as the participants' perceived need for help and their motivation for RTW when assessing eligibility. For example, sickness absence beneficiaries who were already receiving treatment from a psychologist or psychiatrist and/or appeared to have a clear plan for RTW were not considered in need of the intervention. Although motivation for participation was not a formal inclusion criterion, both the CTWR-team and the SIOs considered this an important prerequisite. There were, however, municipal differences in the way in which the intervention was presented and participation encouraged. In municipality A, the SIOs considered participation mandatory, whereas SIOs in municipality B and C left beneficiaries free to decline the offer without it having any negative consequences for their beneficiary status. Interviews with SIOs and participants from municipality B and C indicate that the travelling distance to and from the rehabilitative activities was a significant problem, deterring many from accepting participation.

Reach

The SIOs registered a total of 262 recruited participants (172 from municipality A, 47 from municipality B, and 43 from municipality C). According to the available data, 210 of the recruited beneficiaries actually participated in the intervention, while nine returned to work before the start of the intervention, and seven were rejected by the CTWR-team. A further 11 of the recruited did not wish to participate, while the drop-out reasons for the remaining 25 are unascertained. Since the stated target was 275 participants, the reach of 210 participants is approximately 24% less than expected.

Fidelity

As the CTWR-team and their working procedures were almost the same in Copenhagen and Zealand, the elements "*focus on barriers and resources*" and "*regular adjustments*" have been addressed in the section on Copenhagen. "*Early identification of participants*", however, is described in the Zealand-section on 'Recruitment and Reach'.

Multidisciplinary assessment

The WDS was performed by a CTWR-team consisting of a social worker, a psychologist, a physiotherapist, and an occupational physician. During the evaluation period, a psychiatrist was added to the team. The procedures surrounding the multidisciplinary assessment and creation of a RTW-plan were as in Copenhagen. During the evaluation period however, the multidisciplinary approach was challenged by the reluctance of the SIOs to recruit participants to the full 12-week intervention. Particularly municipality B and C began to request the team's expertise only for individual tasks, such as workplace- or psychiatric assessments (see also the section on '*coordination with SIOs'*).

Coordination of stakeholders

The participants' GP was always contacted and informed of the RTW-plan, and in some cases, the GP participated in meetings with the CTWR-team to discuss and coordinate efforts. If an external psychologist/therapist was involved, the result was usually a division of labour, with the CTWR-team's psychologist addressing work-related issues and the external therapist addressing private issues.

During the evaluation period, legislative changes made the SIOs responsible for the initial contact to the beneficiary's workplace to discuss the options for RTW. Coordination between the CTWR-team and employers thus became an extension of the already established agreements and typically involved participation in meetings with the employer and assistance in negotiating working conditions or, when relevant, terms of termination. For unemployed participants, internships were an option often discussed and utilized, particularly in municipality A, which employed consultants for that specific purpose.

Coordination between the CTWR-team and the SIOs took place through the same channels as in Copenhagen.

Dose delivered and received

Participants' experiences

Most of the participants interviewed were happy with the help and support they received during the intervention and described the CTWR-team as competent and professional. Consultations with the psychologist and assistance in communications with the workplace were deemed particularly helpful elements. The remote location of the rehabilitative activities, however, was perceived as an obstacle to participation. Several interviewees reported being advised to RTW with less hours than they had intended themselves or being encouraged to find another workplace.

SIOs' experiences

The SIOs in all three municipalities were initially positive towards the intervention, but during the evaluation period, particularly municipality B and C became dissatisfied with the CTWR-team's efforts. The sources of dissatisfaction were largely the same as those identified in Copenhagen: Firstly, the documentation received from the CTWR-team regarding participants' status and

progress was too unspecific to be useful in the statutory reassessments and often delivered with considerable delay. During the evaluation period, the RTW-plans became more structured and the online database, allowing the SIOs direct access to the documents as soon as they were created, made a positive difference according to the SIOs. Secondly, the SIOs in municipality B and C found that the CTWR-team lacked understanding of the sickness absence legislation. As a result, the CTWR-team would question, and in some cases oppose, decisions made by the SIOs, for example regarding a participant's continued eligibility for sickness absence benefits. Thirdly, the SIOs found that the CTWR-team's timeframe for RTW was generally too long, and that the focus was on complete recovery rather than RTW.

In municipality A, increased communication between the SIOs and the CTWR-team led to solutions to the issues that were causing dissatisfaction. The SIOs in municipality B and C, on the other hand, did not feel that their complaints were heard, and as a result they more or less stopped recruiting participants to the intervention and used the CTWR-team only for isolated tasks, such as workplace- or psychiatric assessments.

Context

Interviews with the SIOs indicated municipal differences in the managerial support of and involvement with the implementation process. In municipality A, who had made the largest financial investment in the intervention, the jobcentre's management urged the SIOs to make the most of the project, and to invest the resources necessary to overcome initial disagreements. In municipality B and C, on the other hand, the jobcentres' management left it up to the SIOs to decide on the utility of the intervention, thus allowing them to cease recruitment if they did not see satisfactory results. Additionally, the SIOs in municipality A stated that they did not have good alternatives to the expertise offered by the CTWR-team. On the contrary, the SIOs in municipality B and C indicated that other and better alternatives were available to them.

A further barrier to the cooperation with municipality B and C was caused by the CTWR-team moving premises to a more remote location. The considerable travelling requirements deterred many eligible beneficiaries from participation.

Summing up across the four implementation settings

Across all four municipalities, the inclusion criteria appeared to be too narrow for the SIOs to consistently adhere to. As a result, the participants recruited included some who were unemployed, some who had been on sickness absence for more than 12 weeks, and some who had more severe psychological problems than anticipated by the CTWR-team. Temporary capacity constraints also meant that some participants had to wait several weeks between being recruited and attending the WDS, which was frustrating for both participants and SIOs. The multidisciplinary cooperation internally in the CTWR-team, and the coordination and cooperation with external stakeholders (such as GPs and psychotherapists) appeared to work well. Cooperation with the SIOs on the other hand was challenged by initial dissatisfaction with the documentation produced by the CTWR-team, and by divergent expectations of the timeframe for RTW. Additionally, there were some

disagreements regarding interpretation of the sickness absence legislation, and a lack of clarity regarding the aims of the intervention. Most participants were appreciative of the help and support they received, particularly the chance to talk to a psychologist. Some reported being advised to RTW slower than they had expected, or to reconsider their choice of employment.

Interestingly, noticeable differences appeared in the implementation quality across the four settings. In three municipalities (Copenhagen, and B and C in Zealand) the barriers encountered led to dissatisfaction among the SIOs, which was never resolved and reduced motivation to recruit. In municipality B and C the intervention became fragmented, as SIOs requested help with isolated tasks rather than letting participants receive the complete intervention. Reasons that problems were not resolved and implementation hampered include insufficient managerial support for the intervention, and alternative options available. In municipality A in Zealand, however, the determination of both the SIOs and the CTWR- team to overcome initial barriers through extensive communication made successful implementation possible. Table 1 summarises the barriers and facilitators for implementation identified across the four settings.

Table 1: Barriers and facilitators for implementation of the CTWR-intervention in Copenhagen and Zealand

	Barriers	**Facilitators**
Recruitment and reach	Lack of skills and resources to assess mental health problems Changing weekly quotas for recruitment Negative experiences with the intervention Waiting time between recruitment and WDS More atttractive alternatives available	Positive expectations to the intervention Managerial encouragement Participation considered mandatory
Multidisciplinary rehabilitation activities	Participants more severely ill than anticipated: requiring more extensive psychological help inclusion of unemployed: involvement of independent consultants SIOs request for isolated assessments	Inclusion of additional expertise (psychiatrist) in CTWR-team Respect for different perspectives among the team members Training in multidisciplinary cooperation
Coordination of stakeholders	Legislative changes placing responsibility for workplace contact with SIOs	Consistent sharing of documents Participation in structured meetings (GPs, employers)
Cooperation with SIOs	Unspecific and irregular documentation on intervention activities Different expectations of timeframe for RTW Different interpretations of the sickness absence legislation	Structured documents aligned with the SIOs needs Motivation and available resources to solve emergent issues; extensive communication
Participant satisfaction	Waiting time between recruitment and start of intervention Lack of timely information Considerable travelling distance to intervention activities	Availability of psychological support Support in contact with employer
Context	Division between recruitment and follow-up in Jobcentre Lack of managerial support for intervention	Managerial involvement in implementation

Effects

The effects of the intervention were assessed in Copenhagen only, as the establishment of a reference group in Zealand was not successful.

Time to RTW

Table 2 shows the characteristics of participants included in the ITT-sample in Copenhagen. There were no statistically significant differences between the groups in terms of socio-demographics or sickness absence. However, the CTWR-group reported higher levels of somatisation symptoms and lower work ability than the CCM-group.

Table 3 shows the results from the crude analysis, the adjusted analysis and the IV-analysis of time to RTW. The analyses were first carried out with all participants, and then with participants who completed the baseline questionnaire with no missing values. The analyses on all participants showed that the CTWR-group returned slower to work throughout the follow-period than the CCM-group (HR=0.58; 95% CI=0.39-0.85). Figure 7 depicts the unadjusted Kaplan-Meier curves for RTW in the two groups.

Adjustment for age, gender, previous sickness absence and length of sickness absence at inclusion (model I) changed the estimate only marginally (HR=0.50; 95% CI=0.34-0.75). In the IV-analysis, the effect-estimate decreased slightly, but the confidence intervals became considerably wider, rendering the result statistically non-significant (HR=0.70; 95% CI=0.23-2.12) [1].

[1] To ensure that the exclusion of the non-registered participants would not bias results, I performed a conventional survival analysis including them in the CTWR-sample. In this analysis, I still found a slower RTW-rate among CTWR-participants than among CCM-participants (HR=0.63; $p<0.01$). Including the non-registered participants would have called for the presentation of three different analyses on three different samples: 1) conventional, crude survival of all participants, 2) conventional adjusted survival on questionnaire sample, 3) IV-analysis on registered sample. My assessment was that this would be too confusing for readers, and hence I chose only to include the registered participants.

Table 2: Baseline characteristics of participants in Copenhagen

Registry data		**CTWR** (n=88)	**CCM** (n=80)	p
Gender, % (n)	Women	78 (69)	83 (67)	0.38 [1)]
	Men	22 (19)	17 (13)	
Age, mean (SD)		41 (10.2)	41 (9.2)	0.99 [2)]
Weeks on sickness absence at recruitment, mean (SD)		8 (3.2)	9 (3.9)	0.08 [2)]
Weeks on sickness absence in previous year, mean (SD)		1 (4.5)	1 (3.8)	0.60 [2)]
Day of recruitment, % (n)	Monday-Tuesday	69 (61)	35 (28)	<0.01 [1)]
	Wednesday-Thursday	31 (27)	65 (52)	
Questionnaire data		**CTWR** (n=59)	**CCM** (n=56)	p
Occupational group (ESeC), % (n)	Managers & professionals	47 (28)	47 (26)	
	Intermediate	39 (23)	39 (22)	0.99 [1)]
	Working class	14 (8)	14 (8)	
Employed at baseline, % (n)	No	24 (14)	29 (16)	0.55 [1)]
	Yes	76 (45)	71 (40)	
Self-reported reason for sickness absence, % (n)				
Stress/burnout/chronic fatigue		61 (36)	59 (33)	
Depression		34 (20)	39 (22)	0.56 [1)]
Other (e.g. anxiety, bipolar disorder)		5 (3)	2 (1)	
SCL-ANX4 (0-4), mean (SD)		3.1 (1.1)	2.7 (1.2)	0.06 [2)]
SCL-SOM (0-12), mean (SD)		8.2 (3.0)	7.1 (2.6)	0.03 [2)]
MDI (0-50), mean (SD)		26.8 (10.0)	23.3 (10.6)	0.07 [3)]
General health perception (1-5), mean (SD)		2.6 (1.0)	2.5 (0.9)	0.61 [2)]
Self-rated work ability (0-10), mean (SD)		3.1 (2.5)	4.1 (2.4)	0.02 [2)]
RTW-expectancy (0-10), mean (SD)		7.7 (2.9)	8.1 (2.7)	0.33 [2)]
Day of recruitment, % (n)	Monday-Tuesday	73 (43)	30 (17)	<0.01[1)]
	Wednesday-Thursday	27 (16)	70 (39)	

SCL-ANX4: Symptom Checklist 90 revised -Anxiety scale; **SCL-SOM:** Symptom Checklist 90 revised – Somatic distress scale; **MDI:** Major Depression Inventory; 1) Chi-squared test ; 2) Mann-Whitney U-test ; 3) Student's t-test

In the analyses on participants with complete baseline questionnaire data, the results of the crude analysis and of the analysis adjusted for register-based covariates (model I) were comparable to the results based on all participants. Here I further adjusted for variables measured in the questionnaire (model II), which increased the effect-estimate slightly (HR=0.44; 95% CI=0.26-0.74). The IV-analysis showed a similar trend, however, once again wide confidence intervals rendered the result statistically non-significant (HR=0.49; 95% CI=0.17-1.38).

In addition to the intention-to-treat analyses, I conducted analyses that excluded those CTWR-participants, who had declined participation in the intervention (n=28) or had dropped out (n=4). These analyses yielded similar results to those of the intention-to-treat analyses (see appendix IV).

Table 3: Time to return to work during 52 week follow-up

		Estimated HR (95 % CI)			
	Median time to RTW (weeks)	**Crude model**	**Model I**	**Model II**	**IV-analysis**
All participants					
CCM (n=80)	23	1.00	1.00	-	1.00
CTWR (n=88)	36	0.58 (0.39-0.85)	0.50 (0.34-0.75)	-	0.70 (0.23–2.12)
Participants with complete baseline questionnaire data					
CCM (n=56)	21	1.00	1.00	1.00	1.00
CTWR (n=59)	35	0.56 (0.36-0.88)	0.47 (0.30-0.74)	0.44 (0.26-0.74)	0.49 (0.17–1.38)

CCM: Conventional case management; **CTWR**: Coordinated and tailored work rehabilitation; **Model I**: Adjusted for age, gender, previous sickness absence, and length of sickness absence at recruitment; **Model II**: Further adjusted for occupational group, reason for sickness absence, depressive, anxiety and somatisation symptoms, general health perception, work ability and RTW-expectancy
Note: Model II could only be calculated for participants who completed the baseline questionnaire**.**

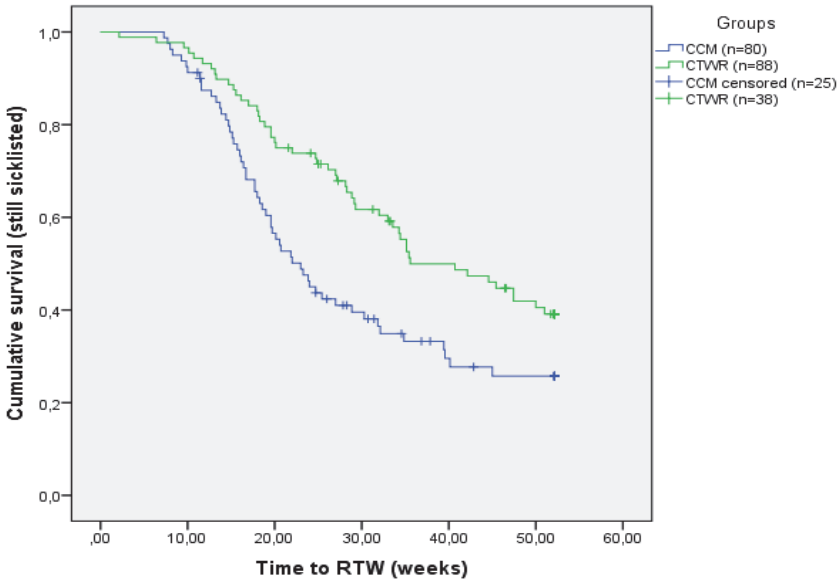

Figure 7: Time to RTW from first day of sickness absence, crude (p<0.01)

Labour market status at follow-up

As shown in table 4, 51% of participants in the CTWR-group were self-supported and 35% received sickness absence benefits at the end of year one (52 weeks after first day of sickness absence), compared to 65% (p=0.09) and 21% (p=0.03) of the participants in the CCM group. At the end of year 2 (104 weeks after first day of sickness absence), 52% of participants in the CTWR-group were self-supported and 13% received sickness absence benefits, compared to 69% (p=0.03) and 5% (p=0.14) of participants in the CCM-group.

When repeating the analyses in the sample of participants who responded to the questionnaire, with further adjustment for employment and health related variables, the differences at the end of year one lost statistical significance. At the end of year two, however, the difference in terms of self-support remained statistically significant, and there was a higher proportion of unemployment benefit recipients in the CTWR-group (20%) than in the CCM-group (13%) (p=0.03). These data are provided in appendix V.

Table 4: Labour market status at follow-up among participants in Copenhagen

Status, %(n)	**Groups**		
Year 1	**CTWR** (n=88)	**CCM** (n=80)	p[1)]
Self-supported (RTW)	51 (45)	63 (50)	0.09
Receiving sickness absence benefits	35 (31)	21 (17)	0.03
Receiving unemployment benefits	8 (7)	9 (7)	0.72
Receiving disability benefits	0 (0)	1 (1)	-
Other (further education, pension, maternity leave, emigration, death)	6 (5)	6 (5)	1.00
Year 2			
Self-supported (RTW)	52 (46)	69 (55)	0.02
Receiving sickness absence benefits	13 (11)	5 (4)	0.14
Receiving unemployment benefits	16 (14)	13 (10)	0.47
Receiving disability benefits	2 (2)	3 (2)	0.84
Other (further education, pensioning, maternity leave, emigration, death)	17 (15)	11 (9)	0.21

[1)] Logistic regression adjusted for gender, age, sickness absence at recruitment, and sickness absence in previous year.

Cumulative sickness absence at follow-up

Participants in the CTWR-group spent more days on sickness absence than participants in the CCM-group in both year one (mean=250 days; SD=107 days vs mean=192 days; SD=105 days; $p<0.01$) and year two (mean=70 days; SD=122 days vs mean=34 days; SD=88 days; $p=0.03$).

Table 5: Cumulative sickness absence among participants in Copenhagen (days)

Groups, mean (SD)	Year 1	p[1)]	Year 2	p[1)]
CTWR (n=88)	250 (107)	<0.01	70 (122)	0.03
CCM (n=80)	192 (105)		34 (88)	

1)Mann-Whitney U-test

Risk of recurrent sickness absence and unemployment

The risk of recurrent sickness absence (>3 weeks) and unemployment was assessed among participants in Copenhagen who returned to work within the first year of follow-up.

Within one year of RTW, 28% of all participants experienced a disruption to RTW in the form of recurrent sickness absence (9%) or unemployment (19%). Table 6 shows the combined hazard ratio among CTWR-recipients of experiencing recurrent sickness absence or unemployment (event free survival), and the individual HRs for experiencing either outcome (cause-specific hazard), when compared to CCM-recipients. None of the analyses show a statistically significant difference in the risk of either outcome, but there appears to be a trend towards a higher risk of both outcomes among CTWR-recipients.

Table 6: Risk of recurrent sickness absence or unemployment after RTW (Copenhagen)

	Crude	Model I	Model II
Event-free survival (all cause hazard)			
All participants			
CCM (n=55)	1.00	1.00	-
CTWR (n=50)	1.47 (0.71-3.06)	1.43 (0.65-3.13)	-
Participants with complete baseline questionnaire data			
CCM (n=41)	1.00	1.00	1.00
CTWR (n=36)	1.28 (0.58-2.80)	1.53 (0.64-3.67)	2.03 (0.75-5.46)
Cause specific hazard: recurrent sickness absence			
All participants			
CCM (n=55)	1.00	1.00	-
CTWR (n=50)	0.95 (0.26-3.56)	1.25 (0.32-4.92)	-
Participants with complete baseline questionnaire data			
CCM (n=41)	1.00	1.00	1.00
CTWR (n=37)	1.17 (0.29-4.70)	1.90 (0.42-8.53)	1.46 (0.19-11.20)
Cause specific hazard: unemployment			
All participants			
CCM (n=55)	1.00	1.00	
CTWR (n=50)	1.79 (0.73-4.39)	1.41 (0.53-3.78)	
Participants with complete baseline questionnaire data			
CCM (n=41)	1.00	1.00	1.00
CTWR (n=37)	1.33 (0.51-3.46)	1.32 (0.44-3.96)	2.33 (0.63-8.61)

Model I is adjusted for gender, age, time to RTW, sickness absence in previous year, and unemployment in previous year.
Model II is adjusted for gender, age, time to RTW, sickness absence in previous year, unemployment in previous year, occupational group, general health, work ability, and symptoms of depression, anxiety and somatisation. **Note:** Model II could only be applied to participants who completed the baseline questionnaire.

Changes in health-related variables

Changes in health-related variables were assessed in the subsample of participants who completed both the baseline and the follow-up questionnaire in Copenhagen (n=72). Analyses of within group changes showed that both the CTWR and the CCM group improved during follow-up in terms of work ability and symptoms of anxiety and depression. Further, the CTWR-group showed an improvement in terms of general health perception and symptoms of somatisation (table 7). Comparing the mean changes between groups showed no statistically significant differences (table 8). In other words, the changes in health related variables were similar in both groups, although there was a trend towards greater improvement in the CTWR-group.

Table 7: Changes in health-related variables within groups (Copenhagen)

Scale mean (SD)	CTWR (n=39)			CCM (n=33)		
	Baseline	Follow-up	p*	Baseline	Follow-up	p*
Self-rated work ability (0-10)	3.1 (2.8)	6.4 (2.8)	<0.01	4.0 (2.3)	6.5 (2.3)	<0.01
General health perception (1-5)	2.6 (1.0)	3.0 (1.1)	0.03	2.6 (0.9)	2.8 (1.0)	0.22
SCL-ANX4 (0-4)	2.9 (1.2)	2.0 (1.4)	<0.01	2.9 (1.1)	2.2 (1.2)	0.00
SCL-SOM (0-12)	7.5 (3.1)	5.9 (3.3)	<0.01	6.8 (2.7)	6.0 (2.9)	0.13
MDI (0-50)	26.8 (10.0)	14.7 (11.2)	<0.01	22.2 (10.1)	14.7 (10.6)	<0.01

*Wilcoxon Signed-Rank test

Table 8: Group comparisons of changes in health-related variables (Copenhagen)

Scale mean (SD)	CTWR (n=39) Mean change(SD)	CCM (n=33) Mean change(SD)	Test of difference p
Self-rated work ability (0-10) [1]	+3.33 (3.2)	+2.45 (2.5)	0.31[1)]
General health perception (1-5) [1]	+0.36 (1.1)	+0.21 (1.0)	0.51[1)]
SCL-ANX4 (0-4) [1]	-0.87 (1.3)	-0.70 (1.2)	0.78[1)]
SCL-SOM (0-12)[2]	-1.62 (2.7)	-0.82 (3.0)	0.23[2)]
MDI (0-50) [2]	-11.10 (10.4)	-7.55 (11.6)	0.18[2)]

[1)] Mann Whitney U-test
[2)]Student's t-test

Specificity analyses

There were no indications that the effects of the intervention in terms of time to RTW and labour market status at follow-up were influenced by gender, age, occupational group, reason for sickness absence, general health perception, self-assessed work ability or RTW-expectancy. The results of the interaction analyses are provided in appendix V.

Discussion

The first aim of this thesis was to assess how the CTWR-intervention was implemented and received in four different settings. The analysis revealed various barriers and facilitators to the success of the implementation, some that were unique to a particular setting, and some that were common to all four settings. The most noticeable common barriers were in relation to cooperation between the SIOs and the rehabilitation professionals in the CTWR-team. These barriers echo the findings of a recent meta-synthesis of qualitative literature on RTW among people with MHPs [21]: The social insurance system tends to have an interest in encouraging early RTW, failing to consider how the health condition may interfere with this goal. Other more practical barriers, such as capacity constraints that caused waiting time between recruitment and screening, and lack of skills to assess mental health problems among SIOs that resulted in more troubled participants than anticipated, were also common to all settings and may have influenced the outcome of the intervention.

Comparing data across settings allowed for the identification of facilitators that helped overcome some of the barriers. For example, the dissatisfaction among SIOs was turned to satisfaction in municipality A in Zealand through extensive communication and a strong commitment to making the most of the intervention. This was possibly facilitated by managerial support or even managerial pressure. Another local facilitator in municipality A was the lack of satisfactory alternatives for eligible beneficiaries, which created a strong incentive to utilise the intervention.

Participants expressed general satisfaction with the intervention. They appreciated the opportunity to discuss their situation with relevant health professionals, and they felt in good hands with the CTWR-team. Particularly the opportunity to talk to a psychologist and to get help with stress management was rated positively. Two negative aspects that were highlighted by several participants were the unawareness of a clear plan for their RTW in both the Copenhagen and the Zealand intervention sites, and the extensive transportation time needed to get to and from intervention activities in the Zealand intervention sites.

The second and third aims of this thesis were to assess the effect of the intervention in terms of reducing participants' sickness absence and improving their labour market attachment. I used two different analytical approaches to assess the effect of the intervention on time to RTW. Both analyses indicated that the intervention delayed RTW when compared to CCM. Adjustment for numerous baseline characteristics did not change this finding. As the results were similar when accounting for unmeasured confounding (the IV-analysis), differences between participants in the intervention and the reference group at baseline are an unlikely explanation of the delayed RTW in the intervention group. Still, the relatively low concordance between day of recruitment and treatment allocation (see table 2) made the uncertainty associated with the IV estimate too large to completely rule out unmeasured confounding as a possible explanation.

At the end of year one, analyses of labour market status showed a higher proportion of participants in the CTWR-group than in the CCM-group receiving sickness absence benefits. At the end of year two, a smaller proportion of participants were self-supported in the CTWR-group than in the CCM-group. Furthermore, looking at cumulative sickness absence, I found that the CTWR-group spent more days being absent during both year one and year two. When assessing the interventions effect on the stability of RTW, I found no indication that recipients of the intervention had a reduced risk of recurrent sickness absence or of unemployment in the first year following RTW.

The fourth and fifth aims of the thesis were to assess the effects of the intervention in terms of improved work ability and symptom reduction. Participants in both groups showed improvements in work ability and symptom reduction, but again, there was no statistically significant indication of superiority of the CTWR-intervention over CCM.

As mentioned in the introduction, other studies of multidisciplinary and coordinated interventions for sickness absence beneficiaries with MHPs have reported null-findings or even negative effects. Lander et al.[46] found no effect of offering beneficiaries with distress symptoms psycho-educative treatment and support from a social worker. Vlasveld et al. [45] found no effects of a collaborative care programme among beneficiaries with major depressive disorder. Although Jensen [47] reported improved RTW as a result of an intervention similar to the CTWR, the majority of participants were sicklisted with musculoskeletal problems, and the study did not report the specific effects among beneficiaries with MHPs. Most recently, the Danish National RTW-programme demonstrated that the effects of instating RTW-coordinators and multidisciplinary teams in 21 municipal jobcentres to promote RTW among beneficiaries, regardless of the reason for sickness absence, varied from positive to negative across settings. Adjusting for reason for sickness absence did not affect the results [50, 51]. In light of the inconclusive findings of these previous studies, there are several different ways of interpreting the present results.

Implementation failure?

Implementation failure is a common reason for inconclusive or negative findings in intervention studies [69, 108]. The analysis of the implementation process revealed that the intervention was not implemented as intended across the four settings, also not in Copenhagen from which the data for the effect evaluation was drawn. The general dissatisfaction with the intervention among SIOs can be considered an implementation failure. But more specifically, the idle waiting time between recruitment and the initiation of CTWR-activities, and the disagreements between the CTWR-team and the SIOs regarding the timeframe for RTW may have contributed to the finding of delayed RTW among intervention recipients. A previous study of municipal sickness absence management identified some barriers to cooperation between SIOs and GPs which may also be relevant in the context of cooperation between SIOs and the CTWR-team [109]. The study found that SIOs ability to cooperate with GPs was hampered by lack of time, frequent staff turnover, and lack of financial resources. The cooperation was characterised by sequential task integration, and the stakeholders

encountered difficulties when reciprocal task integration was needed. Furthermore, decision making was affected by legal constraints and conflicting paradigms.

Another element of the intervention which was not implemented as intended was the coordination with employers. Perhaps partly due to the inclusion of unemployed participants, direct contact between the CTWR-team and employers was rare. Additionally, legislative changes during the study period meant that the initial contact with employers was made by SIOs rather than the CTWR-team. Limited cooperation with employers in RTW interventions is a known phenomenon. Previous research has highlighted the difficulty of establishing close and constructive contact between between healthcare providers, employers and occupational health professionals, even in a country like The Netherlands, where occupational health physicians play a key role in ensuring RTW [110].

Theory failure?

It is also necessary to look at the intervention theory to identify possible explanations for the negative results. Part of the theoretical background for the CTWR-model is the 'readiness –for-return-to-work' framework [84], which in turn is based on the 'stages-of-change' model [111]. A central element in these models is motivation to move from one stage to the next, and motivation for RTW was also mentioned as a key prerequisite for participation by the CTWR-team and SIOs. Motivation is central to persistence in the face of incapacities associated with impairments. It is well known that persons with even profound impairments can work or continue other activities if they retain the motivation to do so and if barriers to their continued participation can be contained [112]. However, it is possible that waiting for people to reach the necessary level of motivation to initiate RTW may delay the process when compared to people who RTW out of necessity, even though they may not feel entirely motivated to do so. Recipients of CCM in this study were not offered consideration of their motivation, but were most likely driven by financial incentives to RTW. This highlights the difficult balancing act of keeping a clear focus on RTW in an intervention without pressurising participants into situations they are not ready for or do not believe they can handle.

Another underlying assumption of the CTWR-model, stemming from the Sherbrooke model, is that work can and should be used therapeutically as part of the rehabilitation [86]. The finding that several participants had been advised to return to work later than they had planned themselves, and in some cases, encouraged to reconsider their choice of employment, points to one of two things: either the theory is correct, but the CTWR-team were not adhering to it (which would be an implementation failure); or the theory is not appropriate in this context, and the CTWR-team were correctly assessing that the work environment for some participants were so hazardous that it would not be beneficial to RTW at that point or perhaps not even to that same job. If the latter is true, then the concept of therapeutic RTW may have to be modified in the context of MHPs. Lack of knowledge and stigmatisation regarding MHPs among co-workers can complicate reintegration in the workplace [113, 114], and since the barriers for RTW are mainly psychosocial in nature [115] it

can be difficult to pinpoint the specific task modifications needed to make a job manageable for someone recovering from a MHP. It is also possible that the nature of the job (e.g. work with high emotional demands) or the social relations at work (e.g. characterised by instability, intense competition or bullying) makes that particular workplace psychologically unsafe for a vulnerable person to return to. In any case, the intervention theory should account for these additional challenges.

It is also worth considering the possibility that the intervention theory relies on a rather naïve or simplistic logic, based on what some sociologists call the "consensus"-perspective of social exchange and organisation [116]. This perspective emphasises common interests and morality, and an intervention based on this perspective presumes open and honest communication between all parties, motivated and knowledgeable social workers, harmonious and tolerant workplaces, and absence of additional problems in the private life which may affect workability and motivation. An intervention based on this kind of logic does not adequately anticipate or address system barriers and inequalities [26]. A recent review of the qualitative literature of RTW [19] found that RTW was dependent on the goodwill and creativity of a complex set of actors. Thus, there appears to be a risk that RTW-interventions that use a discourse of shared goals and cross-disciplinary cooperation may gloss over the diverging responsibilities and associated agendas of stakeholders, and in doing so fail to address them.

Unintended working mechanisms

In extension of the analysis of the intervention's intended working mechanisms which formed the basis of the process evaluation, it may be relevant to look at working mechanisms that were not intended. Doing so can help clarify processes that may have been counterproductive and may be avoided in future implementations. For example, coordination between stakeholders was intended and presumed to facilitate a coherent and efficient rehabilitation process. In practice, the contact between the CTWR-team and SIOs made conflicting interests and paradigms apparent, which were counterproductive to coordination and resulted in disinterest towards and fragmentation of the intervention. Similarly, the multidisciplinary assessment was intended to facilitate a holistic perspective on participants' problems, but in some cases the consideration of a broad range of issues may have made the situation more complicated than perhaps necessary and led to a degree of overprotection of the participant that may have delayed RTW.

A previous Danish intervention study aimed to identify undetected or unreported psychiatric disorders among sickness absentees, and to follow up with advice for treatment and rehabilitation to the caregivers [41]. The authors of that study reported a negative intervention effect in terms of time to RTW and reasoned that the recognition of a psychiatric disorder may have offered legitimacy to remain sick-listed. They also proposed that providing advice for treatment may have postponed RTW because participants waited for the effects of the recommended measures (e.g. antidepressant medication or referral to psychotherapy). These explanations might be applied to the present findings, as participation in the intervention may have legitimised prolonged sickness absence

[112], as well as giving participants an opportunity to reassess their work situation with professional help that was not as readily available to recipients of CCM. Such reassessment may have resulted in the decision to make substantial changes, like changing jobs, contributing to a delayed RTW, a mechanism which would call for reassessment of the intervention theory. Unfortunately, data were not available to compare the extent to which participants in the two groups changed jobs during their sickness absence.

Finally, while the provision of courses in stress management and other psycho-education were well received by participants, it may also have contributed to prolonging the sickness absence. A study of Danish municipal sickness absence management from 2005 showed that courses and further education prolonged sickness absence by preventing RTW while they were ongoing and by not increasing the chances of RTW among recipients afterwards [117].

Learning points for future research

This study demonstrates the complexity arising when evaluating multidisciplinary interventions involving cooperation between stakeholders across the healthcare, social insurance and employment sectors. Several learning points emerged that can be applied to future evaluation studies.

Evaluation should be incorporated at the earliest stages of intervention planning, and should include assessment of both effect and implementation process with both qualitative and quantitative methods. The present findings demonstrate that process evaluations are crucial for understanding effect outcomes, identifying unintended working mechanisms and enabling learning from each trial. It is not possible to find the 'pure' outcome of an intervention, as it is always a product of local interactions [68]. Investigation of contextual factors influencing the implementation and the outcome should thus be prioritised in evaluations. Furthermore, in addition to time to first full or partial RTW, other relevant outcomes, such as stability of RTW, symptom reduction, and labour market status should be considered, especially if unemployed participants are included. Future studies could also benefit from the inclusion of measures, such as readiness for return to work [118] and return to work self-efficacy [119].

External evaluators do not (or should not) have vested interests in the outcomes of the evaluation, in order to provide the best grounds for unbiased judgment. At the same time, external evaluators may have to relinquish complete control of the evaluation design, potentially compromising scientific stringency and completeness of data. This was demonstrated in the present study where quasi-randomisation was the only acceptable option for the SIOs, and the SIOs had to be relied on for recruitment and distribution of the baseline questionnaire, which resulted in loss of data. Whether evaluation is internal or external, ensuring close cooperation with all relevant stakeholders (intervention staff, participants, social insurance offices and other possible data-sources) is vital to valid data collection.

When randomisation is not possible, quasi-randomisation may be set up in a way that provides an instrument for use in IV-analyses. This analytical strategy eliminates the need to measure all confounding variables accurately and is useful for validating the results of conventional, adjusted analyses. However, as evidenced by the results of the present study, IV-analyses require a rather large sample size and a strong instrument to approximate the accuracy of conventional adjusted analyses [82].

This study focused on time to RTW and stability of RTW. Future studies would benefit from the inclusion of measures of the quality of RTW, such as whether or not the same number of hours are worked or the same duties are performed. An informative way of describing and comparing the quality of RTW between groups is using a metric, for example the one developed by Vogel et al. [64]. This metric defines different kinds of RTW at the time of follow-up, such as 'any RTW' (RTW during follow-up but not necessarily working at the end of follow-up), 'sustained RTW' (RTW for at least 3 months, but not necessarily working at the end of follow-up), and 'full RTW' (working at the end of follow-up for at least 3 months with the same amount or even more hours as before the sickness absence period).

Limitations of the study

A general limitation of the present study was the small sample size and the low survey participation, which weakened the statistical analyses and precluded detailed subgroup analyses. This seems to be a common problem in studies of RTW among people with MHPs [45, 120], and particular attention should be paid in the design phase to strategies that may increase reach and encourage questionnaire responding.

Another limitation is the failure to recruit a valid reference group in the Zealand municipalities. I considered using the reference group from Copenhagen, but there were too many differences between Copenhagen and the Zealand municipalities in terms of labour market structure, job opportunities and demographics for that to make sense. Other researchers have noted that it can be problematic to conduct controlled studies in the field of RTW in the context of MHPs [39, 46], as the control group usually always receives some form of treatment, which can vary greatly. Thus, this study would have benefited from more detailed knowledge of the measures offered to CCM participants.

The difficulty in achieving randomisation may be due to different cultures and paradigms at play when cooperating with municipal SIOs. Employees of the social insurance system may find it morally unacceptable to deny people in need the access to interventions that are presumed helpful. The Danish National RTW-programme only randomised in three out of 21 municipalities, because these three had several sickness absence benefit offices which could be assigned to either intervention or control. It was not possible to establish randomisation within the same office [49].

The present study would also have benefited from the inclusion of partial RTW as an outcome. Although partial RTW has been shown not to reduce the duration until returning to regular working hours for employees with MHPs [121], it can be seen as representing a stronger labour market attachment than full time sickness absence. Unfortunately, such data were not available from the registers at my disposal. Finally, a cost-benefit analysis would have been desirable, but this was beyond the scope of this thesis.

Conclusion

The CTWR-intervention did not offer any advantage in terms of time to RTW, labour market status at follow-up, stability of RTW, work ability, or symptom reduction when compared to CCM. In fact, results indicated that the intervention delayed RTW. Implementation problems may have contributed to the findings. For example, the participants recruited were different from the target group originally specified by the inclusion criteria, which made modifications of the intervention necessary (more psychological assistance needed, less cooperation with workplaces). Further, waiting time occurred between recruitment and screening. It is also possible that the intervention theory was flawed, for example by emphasising participant's motivation for RTW as prerequisite for action when the goal of the intervention is to reduce time to RTW. Also, the theory did not appear to account for conflicting priorities and paradigms among key stakeholders. Finally the intervention itself may have produced unintended working mechanisms that prolonged sickness absence, such as participants reconsidering their employment situation or being passive in relation to RTW while participating in the intervention. The study pointed to important learning lessons for future studies of the effects of RTW-interventions implemented in municipal settings, most importantly maintaining close cooperation with all stakeholders to ensure completeness of data.

References

1. OECD. Sickness, Disability and Work: Breaking the Barriers. A synthesis of findings across OECD countries.OECD Publishing, 2010.
2. Borg V, Nexø M, Kolte I, Andersen M. Hvidbog om mentalt helbred, sygefravær og tilbagevenden til arbejde [White paper on mental health, sickness absence and return to work] [Danish]. Copenhagen: The National Research Centre for the Working Environment, 2010.
3. Blustein DL. The psychology of working: A new perspective for career development counseling, and public policy. Mahwah, N.J.: Erlbaum, 2006.
4. Wilkinson R, Marmot MG. Social determinants of health: the solid facts. Copenhagen: World Health Organisation, 2006.
5. Pantazis C, Gordon D, Levitas R. Poverty and social exclusion in Britain: the millenium survey. Pantazis, C., Gordon, D., and Levitas, R. 2006. Bristol, The Policy Press.
6. Westerlund H, Kivimaki M, Singh-Manoux A, Melchior M, Ferrie JE, Pentti J et al. Self-rated health before and after retirement in France (GAZEL): a cohort study. Lancet. 2009; 374:1889-96.
7. Vinokur AD, Schul Y, Vuori J, Price RH. Two years after a job loss: long-term impact of the JOBS program on reemployment and mental health. J Occup Health Psychol. 2000; 5:32-47.
8. Waddell G, Burton K. Is work good for your health and wellbeing? 2006. London, Department of Work and Pensions, The Stationary Office.
9. Lund T, Kivimaki M, Labriola M, Villadsen E, Christensen KB. Using administrative sickness absence data as a marker of future disability pension: the prospective DREAM study of Danish private sector employees. Occup Environ Med. 2008; 65:28-31.
10. World Health Organisation: ICD-10: International Statistical Classification of Diseases and Related Health Problems. 10th Revision. 2007.
11. Wittchen HU, Jacobi F, Rehm J, Gustavsson A, Svensson M, Jonsson B et al. The size and burden of mental disorders and other disorders of the brain in Europe 2010. Eur Neuropsychopharmacol. 2011; 21:655-79.
12. Stansfeld S, Feeney A, Head J, Canner R, North F, Marmot M. Sickness absence for psychiatric illness: the Whitehall II Study. Soc Sci Med. 1995; 40:189-97.
13. Hensing G, Wahlstrom R. Chapter 7. Sickness absence and psychiatric disorders. Scand J Public Healt. 2004; 32:152-80.
14. Pejtersen JH, Kristensen TS. The development of the psychosocial work environment in Denmark from 1997 to 2005. Scand J Work Env Hea. 2009; 35:284-93.
15. OECD. Sick on the job? Myths and realities about mental health and work. 2012. OECD Publishing. Mental health and work.
16. Schademan HK, Jensen S, Thuesen F, Holt H. Virksomhedernes sociale engagement [Corporate social responsibility][Danish]. 2008. Copenhagen, SFI - The Danish National Centre for Social Research.
17. Conti DJ, Burton WN. The economic impact of depression in a workplace. J Occup Med. 1994; 36:983-8.
18. Druss BG, Schlesinger M, Allen HM, Jr. Depressive symptoms, satisfaction with health care, and 2-year work outcomes in an employed population. Am J Psychiat. 2001; 158:731-4.
19. MacEachen E, Clarke J, Franche RL, Irvin E. Systematic review of the qualitative literature on return to work after injury. Scand J Work Env Hea. 2006; 32:257-69.

20. World Health Organization. International Classification of Functioning, Disability and Health (ICF). 2001. Geneva, World Health Organization.

21. Andersen MF, Nielsen KM, Brinkmann S. Meta-synthesis of qualitative research on return to work among employees with common mental disorders. Scand J Work Env Hea. 2011.

22. Loisel P, Durand MJ, Berthelette D, Vezina N, Baril R, Gagnon D et al. Disability prevention - New paradigm for the management of occupational back pain. Dis Manag Health Out. 2001; 9:351-60.

23. Schultz IZ, Stowell AW, Feuerstein M, Gatchel RJ. Models of return to work for musculoskeletal disorders. J Occup Rehabil. 2007; 17:327-52.

24. Adler DA, McLaughlin TJ, Rogers WH, Hong C, Lapitsky L, Lerner D. Job performance deficits due to depression. Am J Psychiat. 2006; 163:1569-76.

25. Blonk RWB, Brenninkmeijer V, Lagerveld SE, Houtman ILD. Return to work: A comparison of two cognitive behavioural interventions in cases of work-related psychological complaints among the self-employed. Work and Stress. 2006; 20:129-44.

26. MacEachen E, Kosny A, Ferrier S, Chambers L. The "toxic dose" of system problems: why some injured workers don't return to work as expected. J Occup Rehabil. 2010; 20:349-66.

27. Friesen MN, Yassi A, Cooper J. Return-to-work: The importance of human interactions and organizational structures. Work. 2001; 17:11-22.

28. Franche RL, Baril R, Shaw W, Nicholas M, Loisel P. Workplace-based return-to-work interventions: optimizing the role of stakeholders in implementation and research. J Occup Rehabil. 2005; 15:525-42.

29. Loisel P, Durand P, Abenhaim L, Gosselin L, Simard R, Turcotte J et al. Management of occupational back pain - the Sherbrooke model - results of a pilot and feasibility study. Occup Environ Med. 1994; 51:597-602.

30. Schandelmaier S, Ebrahim S, Burkhardt SC, de Boer WE, Zumbrunn T, Guyatt GH et al. Return to work coordination programmes for work disability: a meta-analysis of randomised controlled trials. PLoS One. 2012; 7:e49760.

31. Mortensen OS, Andersen JH, Ektor-Andersen J, Eriksen HR, Fallentin N, Frost P et al. Hvidbog om sygefravær og tilbagevenden til arbejde ved muskel- og skeletbesvær - årsager og handlemuligheder [White paper on sickness absence and return to work with musculoskeletal problems. Causes and options for action] [Danish]. 2008. København, Det Nationale Forskningcenter for Arbejdsmiljø.

32. Høgelund J. Effekter af den beskæftigelsesrettede indsats for sygemeldte. 2012. København, SFI. Det Nationale Forskningscenter for Velfærd.

33. Palmer KT, Harris EC, Linaker C, Barker M, Lawrence W, Cooper C et al. Effectiveness of community- and workplace-based interventions to manage musculoskeletal-related sickness absence and job loss--a systematic review. Rheumatology. 2011.

34. van der Klink JJL, Blonk RWB, Schene AH, van Dijk FJH. Reducing long term sickness absence by an activating intervention in adjustment disorders: a cluster randomised controlled design. Occup Environ Med. 2003; 60:429-37.

35. Brouwers EPM, Tiemens BG, Terluin B, Verhaak PFM. Effectiveness of an intervention to reduce sickness absence in patients with emotional distress or minor mental disorders: a randomized controlled effectiveness trial. Gen Hosp Psychiat. 2006; 28:223-9.

36. de Vente W, Kamphuis JH, Ernmelkamp PMG, Blonk RWB. Individual and group cognitive-behavioral treatment for work-related stress complaints and sickness absence: A randomized controlled trial. J Occup Health Psychol. 2008; 13:214-31.

37. Willert MV, Thulstrup AM, Bonde JP. Effects of a stress management intervention on absenteeism and return to work - results from a randomized wait-list controlled trial. Scand J Work Env Hea. 2011; 37:186-95.

38. van Oostrom SH, van MW, Terluin B, de Vet HC, Knol DL, Anema JR. A workplace intervention for sick-listed employees with distress: results of a randomised controlled trial. Occup Environ Med. 2010; 67:596-602.

39. Netterstrøm B, Bech P. Effect of a multidisciplinary stress treatment programme on the return to work rate for persons with work-related stress. A non-randomized controlled study from a stress clinic. Bmc Public Health. 2010; 10:658.

40. Fleten N, Johnsen R. Reducing sick leave by minimal postal intervention: a randomised, controlled intervention study. Occup Environ Med. 2006; 63:676-82.

41. Søgaard HJ, Bech P. The effect on length of sickness absence by recognition of undetected psychiatric disorder in long-term sickness absence. A randomized controlled trial. Scand J Public Healt. 2009; 37:864-71.

42. Arends I, Bruinvels DJ, Rebergen DS, Nieuwenhuijsen K, Madan I, Neumeyer-Gromen A et al. Interventions to facilitate return to work in adults with adjustment disorders. Cochrane Database Syst Rev. 2012; 12:CD006389.

43. Braathen TN, Veiersted KB, Heggenes J. Improved work ability and return to work following vocational multidisciplinary rehabilitation of subjects on long-term sick leave. J Rehabil Med. 2007; 39:493-9.

44. Vlasveld MC, Anema JR, Beekman AT, van MW, Hoedeman R, van Marwijk HW et al. Multidisciplinary collaborative care for depressive disorder in the occupational health setting: design of a randomised controlled trial and cost-effectiveness study. BMC Health Serv Res. 2008; 8:99.

45. Vlasveld MC, van der Feltz-Cornelis CM, Ader HJ, Anema JR, Hoedeman R, van MW et al. Collaborative care for sick-listed workers with major depressive disorder: a randomised controlled trial from the Netherlands Depression Initiative aimed at return to work and depressive symptoms. Occup Environ Med. 2013; 70:223-30.

46. Lander F, Friche C, Tornemand H, Andersen JH, Kirkeskov L. Can we enhance the ability to return to work among workers with stress-related disorders? Bmc Public Health. 2009; 9:372.

47. Jensen AG. A two-year follow-up on a program theory of return to work intervention. Work. 2013; 44:165-75.

48. Durand MJ, Loisel P, Hong QN, Charpentier N. Helping clinicians in work disability prevention: the work disability diagnosis interview. J Occup Rehabil. 2002; 12:191-204.

49. Aust B, Helverskov T, Nielsen MB, Bjorner JB, Rugulies R, Nielsen K et al. The Danish national return-to-work program--aims, content, and design of the process and effect evaluation. Scand J Work Env Hea. 2012; 38:120-33.

50. Poulsen OM, Aust B, Bjorner JB, Rugulies R, Hansen JV, Tverborgvik T et al. Effect of the Danish return-to-work program on long-term sickness absence: results from a randomized controlled trial in three municipalities. Scand J Work Env Hea. 2014; 40:47-56.

51. Nielsen MB, Vinslov HJ, Aust B, Tverborgvik T, Thomsen BL, Bue BJ et al. A multisite randomized controlled trial on time to self-support among sickness absence beneficiaries. The Danish national return-to-work programme. Eur J Public Health. 2014.

52. Gabbay M, Taylor L, Sheppard L, Hillage J, Bambra C, Ford F et al. NICE guidance on long-term sickness and incapacity. Br J Gen Pract. 2011; 61:e118-e124.

53. Håndbog i evaluering. Metoder til at dokumentere og vurdere proces og effekt af offentlige indsatser [Handbook of evaluation. Methods for documenting and assessing process and effect of public interventions] [Danish].Anvendt Kommunalforskning (AKF), 2004.

54. Stake RE, Schwandt TA. On discerning quality in evaluation. In: Shaw IF, Greene JC, Mark MM, editors. The Sage handbook of evaluation. Thousand Oaks, CA: Sage; 2006, p. 404-18.

55. Hurteau M, Houle S, Mongiat S. How legitimate and justified are judgements in programme evaluation? Evaluation. 2009; 15:307-19.

56. House ER. Logic of Evaluative Argument. In: House ER, editor. Evaluating with validity. Beverly Hills, CA: Sage; 1980, p. 67-96.

57. Young AE, Wasiak R, Roessler RT, McPherson KM, Anema JR, van Poppel MNM. Return-to-work outcomes following work disability: Stakeholder motivations, interests and concerns. J Occup Rehabil. 2005; 15:543-56.

58. Pomaki G, Franche RL, Murray E, Khushrushahi N, Lampinen TM. Workplace-based work disability prevention interventions for workers with common mental health conditions: a review of the literature. J Occup Rehabil. 2012; 22:182-95.

59. Grossi G, Santell B. Quasi-experimental evaluation of a stress management programme for female county and municipal employees on long-term sick leave due to work-related psychological complaints. J Rehabil Med. 2009; 41:632-8.

60. Rebergen DS, Bruinvels DJ, Bezemer PD, van der Beek AJ, van Mechelen W. Guideline-based care of common mental disorders by occupational physicians (CO-OP study): a randomized controlled trial. J Occup Env Med. 2009; 51:305-12.

61. van der Feltz-Cornelis CM, Meeuwissen JAC, de Jong FJ, Hoedeman R, Elfeddali I. Randomised controlled trial of a psychiatric consultation model for treatment of common mental disorder in the occupational health setting. BMC Health Serv Res. 2007; 7.

62. Bültmann U, Sherson D, Olsen J, Hansen CL, Lund T, Kilsgaard J. Coordinated and tailored work rehabilitation: a randomized controlled trial with economic evaluation undertaken with workers on sick leave due to musculoskeletal disorders. J Occup Rehabil. 2009; 19:81-93.

63. Baldwin ML, Johnson WG, Butler RJ. The error of using returns-to-work to measure the outcomes of health care. Am J Ind Med. 1996; 29:632-41.

64. Vogel AP, Barker SJ, Young AE, Ruseckaite R, Collie A. What is return to work? An investigation into the quantification of return to work. Int Arch Occup Env Hea. 2011; 84:675-82.

65. Mattke S, Balakrishnan A, Bergamo G, Newberry SJ. A review of methods to measure health-related productivity loss. Am J Manag Care. 2007; 13:211-7.

66. McKnight PE, Kashdan TB. The importance of functional impairment to mental health outcomes: a case for reassessing our goals in depression treatment research. Clin Psychol Rev. 2009; 29:243-59.

67. Griffiths A. Organizational interventions: facing the limits of the natural science paradigm. Scand J Work Env Hea. 1999; 25:589-96.

68. Pawson R, Tilley N. Realistic evaluation. Throwbridge, Wiltshire: The Cromwell Press, 1997.

69. Durlak JA, DuPre EP. Implementation matters: a review of research on the influence of implementation on program outcomes and the factors affecting implementation. Am J Commun Psychol. 2008; 41:327-50.

70. Hawe P, Shiell A, Riley T, Gold L. Methods for exploring implementation variation and local context within a cluster randomised community intervention trial. J Epidemiol Commun H. 2004; 58:788-93.

71. da Costa AF, Pegado E, Ávila P, Coelho AR. Mixed-method evaluation of complex programmes: The national reading plan in Portugal. Evaluation and Programme Planning. 2013; 39:1-9.

72. Creswell JW, Clark VLP. Designing and conducting mixed method research. Thousand Oaks, CA: Sage, 2006.

73. Braverman MT, Arnold ME. An evaluator's balancing act: Making decisions about methodological rigormethodological rigor. New Directions for Evaluation. 2008; 120:71-86.

74. Bonell CP, Hargreaves J, Cousens S, Ross D, Hayes R, Petticrew M et al. Alternatives to randomisation in the evaluation of public health interventions: design challenges and solutions. J Epidemiol Commun H. 2011; 65:582-7.

75. Blackwood B, O'Halloran P. On the problems of mixing RCTs with qualitativeresearch: the case of the MRC framework for the evaluation of complex healthcareinterventions. J Res Nurs, 15(6), 511-521. 2010; 15:511-21.

76. Earle CC, Tsai JS, Gelber RD, Weinstein MC, Neumann PJ, Weeks JC. Effectiveness of chemotherapy for advanced lung cancer in the elderly: instrumental variable and propensity analysis. J Clin Oncol. 2001; 19:1064-70.

77. Martens EP, Pestman WR, de Boer A, Belitser SV, Klungel OH. Instrumental variables application and limitations. Epidemiol. 2006; 17:260-7.

78. Cousens S, Hargreaves J, Bonell C, Armstrong B, Thomas J, Kirkwood BR et al. Alternatives to randomisation in the evaluation of public-health interventions: statistical analysis and causal inference. J Epidemiol Commun H. 2011; 65:576-81.

79. Angrist JD, Imbens GW, Rubin DB. Identification of causal effects using instrumental variables. JASA. 1996; 91:444-55.

80. Greenland S. An introduction to instrumental variables for epidemiologists. Int J Epidemiol. 2000; 29:722-9.

81. Leigh JP, Schembri M. Instrumental variables technique: cigarette price provided better estimate of effects of smoking on SF-12. J Clin Epidemiol. 2004; 57:284-93.

82. Rassen JA, Brookhart MA, Glynn RJ, Mittleman MA, Schneeweiss S. Instrumental variables I: instrumental variables exploit natural variation in nonexperimental data to estimate causal relationships. J Clin Epidemiol. 2009; 62:1226-32.

83. Kilsgaard J, Sherson D, Bültmann U, Olsen J, Pedersen J, Lund T. Koordineret indsats for arbejdsfastholdelse (KIA) af sygemeldte med længerevarende smertegener fra bevægeapparatet. 2006. København, Det Nationale Forskningscenter for Arbejdsmiljø.

84. Franche RL, Krause N. Readiness for return to work following injury or illness: Conceptualizing the interpersonal impact of health care, workplace, and insurance factors. J Occup Rehabil. 2002; 12:233-56.

85. Bandura A. Self-efficacy: toward a unifying theory of behavioral change. Psychol Rev. 1977; 84:191-215.

86. Durand MJ, Loisel P. Therapeutic Return to Work: Rehabilitation in the workplace. Work. 2001; 17:57-63.

87. Nieuwenhuijsen K. Employees with common mental disorders: from diagnosis to return to work. 2004. Coronel Institute for Occupational and Environemental medicine, University of Amsterdam.

88. Høgelund J, Holm A. Case management interviews and the return to work of disabled employees. J Health Econ. 2006; 25:500-19.

89. Høgelund J, Boll J, Skou M, Jensen S. Effekter af ændringer i sygedagpengeloven [Effects of changes in sickness absence legislation] [Danish]. Opfølgning på sygedagpenge del II [Danish]. 2008. Copenhagen, SFI - The Danish National Centre for Social Research.

90. Sekjær, K. Stadigt flere psykisk syge må vente på behandling [Increasing number of mentally ill must wait for treatment][Danish]. Available from: **http://www.information.dk/259442**.

91. Chen H. Theory-driven evaluation. Newbury Park, CA: Sage, 1990.

92. Caracelli VJ, Greene JC. Crafting mixed-method evaluation designs. New Directions for Evaluation. 1997; 74:19-32.

93. Greene JC, Caracelli VJ. Defining and describing the paradigm issue in mixed-method evaluation. New Directions for Evaluation. 1997; 74:5-17.

94. Pedersen J, Villadsen E, Burr H., Martin MHT, Nielsen MBD, Meinertz L. Register for sygedagpenge og sociale ydelser i Danmark [The Danish register of sickness absence compensation and social transfer payments][Danish]. 2011. Copenhagen, The National Research Centre for the Working Environment.

95. Braun V, Clarke V. Using thematic analysis in psychology. Qual Res Psychol. 2006; 3:77-101.

96. QSR. NVivo8. 2008. QSR International Ltd.

97. Ware JEJr, Sherbourne CD. The MOS 36-item short-form health survey (SF-36). I. Conceptual framework and item selection. Med Care. 1992; 30:473-83.

98. Derogatis LR. SCL-90-R. Administration, scoring and procedures. MANUAL-II.Townson MD, 1983.

99. Bech P, Rasmussen NA, Olsen LR, Noerholm V, Abildgaard W. The sensitivity and specificity of the Major Depression Inventory, using the Present State Examination as the index of diagnostic validity. J Affect Dis. 2001; 66:159-64.

100. Saunders RP, Evans MH, Joshi P. Developing a process-evaluation plan for assessing health promotion program implementation: a how-to guide. Health Prom Pract. 2005; 6:134-47.

101. Nielsen MBD, Madsen IEH, Bültmann U, Christensen U, Diderichsen F, Rugulies R. Predictors of return to work in employees sick-listed with mental health problems: findings from a longitudinal study. Eur J Public Health. 2011; 21:806-11.

102. Sell L, Bültmann U, Rugulies R, Villadsen E, Faber A, Sogaard K. Predicting long-term sickness absence and early retirement pension from self-reported work ability. Int Arch Occ Env Hea. 2009; 82:1133-8.

103. Virtanen M, Kawachi I, Oksanen T, Salo P, Tuisku K, Pulkki-Raback L et al. Socio-economic differences in long-term psychiatric work disability: prospective cohort study of onset, recovery and recurrence. Occup Environ Med. 2011; 68:791-8.

104. Blank L, Peters J, Pickvance S, Wilford J, MacDonald E. A systematic review of the factors which predict return to work for people suffering episodes of poor mental health. J Occup Rehabil. 2008; 18:27-34.

105. Varadhan R, Weiss CO, Segal JB, Wu AW, Scharfstein D, Boyd C. Evaluating health outcomes in the presence of competing risks: a review of statistical methods and clinical applications. Med Care. 2010; 48:S96-105.

106. Koopmans PC, Bultmann U, Roelen CA, Hoedeman R, van der Klink JJ, Groothoff JW. Recurrence of sickness absence due to common mental disorders. Int Arch Occup Env Hea. 2011; 84:193-201.

107. Koopmans PC, Roelen CA, Groothoff JW. Frequent and long-term absence as a risk factor for work disability and job termination among employees in the private sector. Occup Environ Med. 2008; 65:494-9.

108. Rebergen DS, Bruinvels DJ, Bos CM, van der Beek AJ, van MW. Return to work and occupational physicians' management of common mental health problems--process evaluation of a randomized controlled trial. Scand J Work Env Hea. 2010; 36:488-98.

109. Johansen K, Sahl Andersen J, Mikkelsen S, Lynge E. Decision making and co-operation between stakeholders within the process of sick leave. A case study in a Danish municipality. J Interprof Care. 2011; 25:59-65.

110. Taimela S. Randomised trials on return-to-work programmes for major depressive disorder. Occup Environ Med. 2013; 70:521-2.

111. Prochaska JO, Diclemente CC. Stages of change in the modification of problem behaviors. Prog Behav Modif. 1992; 28:183-218.

112. Mechanic D. Sociological dimensions of illness behavior. Soc Sci Med. 1995; 41:1207-16.

113. Saint-Arnaud L, Saint-Jean M, Demasse J. Towards an enhanced understanding of factors involved in the return-to-work process of employees absent due to mental health problems. Can J Comm Ment Health. 2006; 25:303-15.

114. Hinshaw SP, Cicchetti D. Stigma and mental disorder: conceptions of illness, public attitudes, personal disclosure, and social policy. Dev Psychopathol. 2000; 12:555-98.

115. Noordik E, Nieuwenhuijsen K, Varekamp I, van der Klink JJ, Dijk Jv. Exploring the return-to-work process for workers partially returned to work and partially on long-term sick leave due to common mental disorders: a qualitative study. Disabil Rehabil. 2010.

116. Ritzer G. Sociological theory. New York: McGraw-Hill, 1992.

117. Høgelund J, Holm A. Returning the long-term sick-listed to work: The effects of educational measures and employer separations in Denmark. In: Saunders P, editor. Welfare to work in practice. Social security and participation in economic and social life. Ashgate: Aldershot; 2005.

118. Franche RL, Corbiere M, Lee H, Breslin FC, Hepburn CG. The Readiness for Return-To-Work (RRTW) scale: development and validation of a self-report staging scale in lost-time claimants with musculoskeletal disorders. J Occup Rehabil. 2007; 17:450-72.

119. Brouwer S, Franche RL, Hogg-Johnson S, Lee H, Krause N, Shaw WS. Return-to-work self-efficacy: development and validation of a scale in claimants with musculoskeletal disorders. J Occup Rehabil. 2011; 21:244-58.

120. Cook JA. Employment barriers for persons with psychiatric disabilities: update of a report for the President's Commission. Psychiatr Serv. 2006; 57:1391-405.

121. Høgelund J, Holm A, Eplov LF. The effect of part-time sick leave for employees with mental disorders. J Ment Health Policy Econ. 2012; 15:157-70.

Appendices

I: Declarations of authorship

II: Papers

III: Comparison of registered and non-registered participants

VI: Per protocol analyses of time to RTW

V: Specificity analyses

VI: Labour market status at follow-up

VII: Questionnaires

Appendix I

Appendix I: Declarations of authorship

Declaration of authorship:

Manuscript title: *Implementation of a coordinated and tailored return-to-work intervention for employees with mental health problems.*

Authors: Marie HT Martin (1,2), Maj Britt D. Nielsen (1), Signe MA Petersen (1), Louise Meinertz (1,3), Reiner Rugulies (1,2,3)

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List of authors' contributions:

- Marie HT Martin: Contributed to the formulation of research questions, design of the study, data collection and analysis. Contributed to the background, discussion and conclusion, and wrote the first and final versions of the manuscript.
- Maj Britt D Nielsen: Contributed to the formulation of research questions, study design, background, discussion and revision of the manuscript.
- Signe MA Pedersen: Contributed to the collection and analysis of data and to revision of the manuscript.
- Louise Meinertz: Contributed to the formulation of research questions, study design, data collection and analysis, and revision of the manuscript.
- Reiner Rugulies: Contributed to the study design, background, discussion, conclusion and revision of the manuscript.

The authors are also in agreement that this manuscript will be used in the Ph.D. thesis of Marie HT Martin.

Copenhagen, June, 2014

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Declaration of authorship:

Manuscript title: *Effectiveness of a coordinated and tailored return-to-work intervention for sickness absence beneficiaries with mental health problems.*

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- Maj Britt D Nielsen: Contributed to the formulation of research questions, study design, data collection, background , discussion and revision of the manuscript.
- Ida EH Madsen: Contributed to the analysis of data and revision of the manuscript.
- Signe MA Pedersen: Contributed to the data collection and revision of the manuscript.
- Theis Lange: Contributed to the analysis of data.
- Reiner Rugulies: Contributed to the study design, background, discussion, conclusion and revision of the manuscript.

The authors are also in agreement that this manuscript will be used in the Ph.D. thesis of Marie HT Martin.

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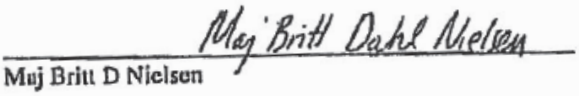

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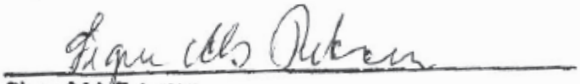

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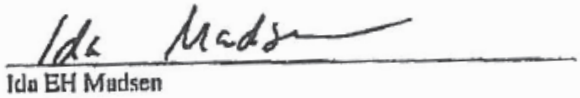

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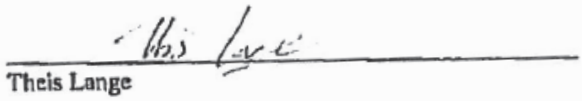

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Manuscript title: *Barriers and facilitators for the implementation of a return-to-work intervention for sickness absence beneficiaries with mental health problems: results from three Danish municipalities.*

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- Louise Moefeldt: Contributed to data collection and analysis, and the discussion and conclusion of the manuscript.
- Maj Britt D Nielsen: Contributed to selection of research questions, data collection, background , discussion and conclusion of the manuscript.
- Reiner Rugulies: Contributed to the background, discussion and conclusion of the manuscript.

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Declaration of authorship:

Manuscript title: *Stability of return to work after a coordinated and tailored intervention for sickness absence beneficiaries with mental health problems: results of a two-year follow-up study.*

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- Maj Britt D Nielsen: Contributed to selection of research questions, data collection, background , discussion and conclusion of the manuscript.
- Jacob Pedersen: Contributed to the selection of methods and analysis of data.
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Appendix II

Appendix II: Papers

Paper 1:
Implementation of a coordinated and tailored return-to-work intervention for sickness absence beneficiaries with mental health problems. Published in Journal of Occupational Rehabilitation, 2012;22:427-36.

Paper 2:
Effectiveness of a coordinated and tailored return-to-work intervention for sickness absence beneficiaries with mental health problems. Published in Journal of Occupational Rehabilitation, 2013;23:621-30.

Paper 3:
Barriers and facilitators for the implementation of a return-to-work intervention for sickness absence beneficiaries with mental health problems: Results from three Danish municipalities. Submitted to Scandinavian Journal of Public Health.

Paper 4:
Stability of return to work after a coordinated and tailored intervention for sickness absence beneficiaries with mental health problems: results of a two-year follow-up study. Submitted to Disability and Rehabilitation.

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Implementation of a Coordinated and Tailored Return-to-Work Intervention for Employees with Mental Health Problems

Marie H. T. Martin · Maj Britt D. Nielsen · Signe M. A. Petersen · Louise M. Jakobsen · Reiner Rugulies

Published online: 14 January 2012

Abstract *Purpose* Interventions to promote return to work (RTW) after sickness absence are often complex, involving numerous stakeholders and thus prone to implementation problems. To understand the outcomes of such interventions, researchers need to look beyond effectiveness data and incorporate systematic process evaluations. This article presents findings from a process evaluation of a coordinated and tailored RTW-intervention for employees with mental health problems. The purpose was to elucidate the implementation process and identify barriers for the feasibility and sustainability of the intervention. *Methods* The evaluation draws on comprehensive data from observations of and documents from the intervention, a two-waved survey among participants (n = 76), two group interviews with the intervention team, three group interviews with municipal social insurance officers (SIOs), and ten individual interviews with participants. *Results* We identified several barriers to the feasibility and sustainability of the intervention: (1) the inclusion criteria were perceived as too narrow by those responsible for recruitment (SIOs); (2) waiting lists occurred; (3) participants had more severe mental health problems than expected; (4) key stakeholders had divergent expectations of the timeframe for RTW; (5) the SIOs felt insufficiently informed about the intervention; (6) the global financial downturn resulted in many participants losing their job, which impeded workplace-based RTW-efforts. *Conclusions* This study points out important pitfalls in implementing RTW-interventions, pertaining to specification of the target population, consideration of contextual constraints, and ensuring cooperation between key stakeholders. Thorough assessment of local context and stakeholder needs and concerns is likely to improve the feasibility and sustainability of future RTW-interventions.

Keywords Return-to-work · Mental health · Implementation · Feasibility · Program evaluation · Process evaluation

Abbreviations

RTW	Return-to-work
SIO	Social insurance officer

Introduction

In recent years, research on the effectiveness of return-to-work (RTW) interventions for employees with common mental health problems (MHPs) has proliferated [1–7]. The interventions are, however, varied in both content and context. Extensive research has documented that RTW is a multifaceted process, involving complex interactions between, on the one hand, biological, psychological and social factors, and on the other hand, social insurance-, healthcare- and workplace systems [8, 9]. Consequently, RTW-interventions are often complex, involving a multitude of stakeholders with different motivations and concerns for RTW [10].

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As the demand for effective RTW-interventions is growing [11], so is the need for knowledge about what facilitates and impedes successful implementation. Process evaluations are valuable tools for both practitioners and researchers to determine the feasibility and sustainability of interventions in settings that are themselves dynamic and complex [12]. Most studies in the field, however, focus solely on effectiveness.

This article presents a process evaluation of a RTW-intervention aimed at employees on long term sickness absence (>4 weeks) due to common MHPs. The approach has previously been successfully applied among Danish residents sick-listed due to musculoskeletal disorders [13], and the present intervention represents the first application among sickness absence compensation recipients with MHPs. The aim of the study was to investigate the implementation of the intervention, including identification of barriers, and to assess the feasibility and potential sustainability of the intervention.

Legislative Context

The Danish sickness benefit scheme covers wage-earners, self-employed and unemployed Danish residents for a maximum of 52 weeks. No distinction is made between work-related and non-work related sickness absence. Employers pay the full wage for the first 3 weeks of absence, after which they can claim compensation for part of the wage from the local municipality. If staff cutbacks are being made, or if the absence exceeds 120 days, employees can be dismissed while sick-listed. Municipal Social Insurance Officers (SIOs) are responsible for evaluating and monitoring sickness absence compensation recipients and for initiating RTW-efforts. The SIOs must assess all recipients and conduct regular follow-up assessments (every fourth week) for those at risk of prolonged absence. The SIOs rely primarily on information given by the recipients. Medical information is subsequently requested in two-thirds of all cases [14, 15].

Methods

Content and Aim of the Intervention

The intervention was organised as a collaboration between a Danish municipality and a private company specialising in a coordinated and tailored RTW-approach, based on elements from the Sherbrooke-model [16], and the Stages-of-Change-model [17]. SIOs in the municipal job centre were responsible for recruiting participants, while the private company offered the following efforts: (1) work disability screenings conducted by a multidisciplinary team to assess disability and functioning and barriers and resources for RTW; (2) formulation of RTW-plans; (3) implementation of RTW-plans, with regular updates according to participants' current situation. The intervention lasted 12 weeks for each participant. The aim of the intervention was to facilitate an early RTW and reduce sickness absence and symptoms of MHPs.

Design of the Evaluation

In 2008 the National Research Centre for the Working Environment (NRCWE) was contracted by the Danish National Prevention Fund to conduct an external evaluation of the above-described intervention. This article presents findings from the process evaluation, while findings from the effect evaluation will be published in the near future (data not yet available). The intervention trial lasted from January 2008 until January 2009. The process evaluation covered the period May 2008–January 2009 to allow for the intervention to be put into use. We followed the guidelines described by Saunders et al. [18] and assessed the recruitment, reach, fidelity, dose delivered, dose received, and context of the intervention. Table 1 presents the associated specific research questions, their operationalisation and measurement.

Data Collection and Analysis

We collected qualitative and quantitative data from field observations, surveys, interviews, intervention documents, and administrative records.

Observations

We observed three multidisciplinary team conferences (approximately 3 h each)—where cases were discussed and RTW-plans developed—and took field notes according to an observation template developed for the study. Two researchers observed each session and subsequently compared and aligned notes.

Survey Data

In collaboration with the SIOs, we carried out a two-waved survey among participants. The SIOs handed out the baseline-questionnaire, and we mailed the follow-up questionnaire 9 months later. The survey assessed respondents' demographic characteristics, employment situation and experience of the intervention. In addition to "tick-the-box" questions (e.g., "A health professional visited my workplace") we asked to what extent participants agreed with statements, such as "I received all the information I needed", on a 5-point scale with response categories ranging from "I

Table 1 Research questions, operationalisation and measurements

	Question	Data sources	Tools/procedures	Data analysis/ synthesis
Recruitment	How were participants recruited? To what extent were inclusion criteria adhered to? Were there any barriers to recruitment?	Multidisciplinary team Municipal SIOs	Semi-structured interviews	Transcription and thematic coding and synthesis in NVivo
Reach	Was the expected number of participants recruited? How many dropped out?	Multidisciplinary team Municipal SIOs Records of recruitment and participation	Semi-structured interviews Collection of records of recruitment and participation	Transcription and thematic coding and synthesis in NVivo Quantitative analysis of recruitment data in SPSS
Fidelity	To what extent was the intervention implemented according to the principles of tailored, coordinated and multidisciplinary rehabilitation, focusing on resources and barriers in relation to RTW?	Multidisciplinary team RTW-plans	Semi-structured interviews Observation of team conferences Collection of RTW-plans	Transcription and thematic coding and synthesis in NVivo Synthesis of field notes Systematic content analysis of written plans
Dose delivered	To what extent did the multidisciplinary team initiate efforts to overcome the identified barriers for RTW? Which efforts/activities were typically used? When and how much were individual stakeholders involved?	Multidisciplinary team RTW-plans	Semi-structured interviews Collection of RTW-plans	Transcription and thematic coding and synthesis in NVivo Systematic content analysis of written plans
Dose received	Did participants receive the intervention as intended? How did participants experience timing, components and results of the intervention? How did other stakeholders experience the intervention?	Participants Municipal SIOs	Semi-structured interviews Administration and collection of follow-up questionnaire	Transcription and thematic coding and synthesis in NVivo Quantitative analysis of questionnaire data in SPSS
Context	What individual, organisational, political or financial factors may have influenced implementation and outcome of the intervention?	Multidisciplinary team Municipal SIOs Participants and researchers	Semi-structured interviews Reflection on collected data and current local/global societal situation	Transcription and thematic coding and synthesis in NVivo Identification of likely contextual influences

completely agree" to "I completely disagree". Answers were categorised into "Agree" ("I agree" + "I completely agree"), "Neutral" ("I neither agree nor disagree"), and "Disagree" ("I disagree" + "I completely disagree"). The survey also measured participants' depression, anxiety and somatic distress symptoms, using the Major Depression Inventory (MDI), [19] and subscales of the Symptom Checklist-90-Revised (SCL-90-R) [20].

During the evaluation period, the SIOs recruited a total of 152 participants to the intervention. Only 106 of these received the baseline questionnaire, as the SIOs did not always have time to hand it out. We received 76 responses (72% of recipients), and 53 follow-up responses (70% of baseline sample; 50% of total sample). We analysed the baseline survey data based on the principle of intention-to-treat, while analyses on the follow-up survey data (experience of the intervention) only included actual participants.

Semi-Structured Interviews

We conducted two semi-structured group interviews with the multidisciplinary team and three with SIOs, each lasting approximately 1.5 h. We also conducted one semi-structured, individual interview with the intervention management and ten with participants, each lasting approximately 1 h. All interviews were audio-taped, transcribed verbatim and coded thematically using NVivo software, version 8 [21].

Documents

We used the intervention protocol as a broad guide for the data collection and evaluation, and more specifically for the assessment of implementation fidelity. We collected and analysed 70 RTW-plans documenting the planned steps towards RTW.

Administrative Data

From the jobcentre and the multidisciplinary team we collected administrative records on date of recruitment and work disability screening.

Results

Recruitment

Procedure

The SIOs were instructed to recruit five participants per week according to the inclusion criteria outlined by the multidisciplinary team: employees aged 20–60 years, sick-listed 4–12 weeks due to a common MHP (ICD-10: F30-F48, and related conditions not specified in ICD-10, e.g. burnout), and no co-morbid psychotic conditions. Eligible persons were referred through an electronic system, immediately informing the multidisciplinary team of the new participant.

Adherence to Inclusion Criteria

Table 2 shows participants' baseline characteristics. The mean age was 42 years (range 21–68), and one participant was older than 60 years. The most common cause of absence was stress-related disorders (57%), followed by depression (37%). The mean length of sickness absence at recruitment was 8.2 weeks, and 94% of participants were referred before 12 weeks (data not shown).

The multidisciplinary team specified that the SIOs should only recruit participants with relatively mild MHPs, although this criteria was not clearly stated in the intervention protocol. Our interviews showed that the SIOs had difficulties assessing both type and severity of MHPs. Consequently, the multidisciplinary team assessed some of the recruited participants as unsuitable for the intervention

Table 2 Characteristics of participants at time of recruitment

Participants included in survey (n = 76)[a]	
Gender, % (n)	
Female	82 (62)
Male	18 (14)
Mean age, (SD)	42 (10.1)
Employed at baseline, % (n)	
No	21 (16)
Yes	79 (60)
Mean length of sickness absence at referral in weeks (SD)	8.2 (2.0)
Self-reported reason for sickness absence, % (n)	
Stress/burnout/chronic fatigue	57 (43)
Depression	37 (28)
Other (e.g. anxiety, bipolar disorder)	6 (5)
SCL-ANX4 (0–4), mean (SD)	3.1 (1.1)
SCL-SOM (0–12), mean (SD)	8.2 (2.9)
MDI (0–50), mean (SD)	26.2 (9.9)
Depression according to ICD-10 categories assessed by the MDI	
No depression, % (n)	60 (46)
Mild depression, % (n)	3 (2)
Moderate depression, % (n)	13 (10)
Severe depression, % (n)	24 (18)

[a] The sample represents intention-to-treat, leaving out those excluded by the multidisciplinary team (n = 3)

SCL-ANX4 Symptom Checklist 90 revised-Anxiety scale

SCL-SOM Symptom Checklist 90 revised-Somatic distress scale

MDI Major Depression Inventory

and the estimated prognoses for RTW for participants often exceeded 12 weeks (Interviews, September, 2008, and April, 2009). Many participants had lost their job when they attended the work disability screening (21% of baseline responders) and thus were not eligible according to the original inclusion criteria. However, on the SIOs' request, the multidisciplinary team agreed to include newly unemployed participants (Interviews, September and November, 2008).

Barriers to Recruitment

We identified several barriers to recruitment. Firstly, while the SIOs mainly recruited participants with less than 12 weeks of absence, 20 (42%) participants in our survey had waited more than 3 weeks for the work disability screening. Interviews revealed that waiting lists primarily occurred due to reduced capacity in the multidisciplinary team during the summer of 2008, forcing the multidisciplinary team to temporarily reduce the allowed amount of weekly recruitments. The changing weekly quota was perceived as "unprofessional" by the SIOs and discouraged them from recruiting (Interview, September, 2008, and January, 2009). Secondly, the SIOs felt insufficiently informed about the content of the intervention and the progress of participants, resulting in uncertainty about the purpose of the intervention. Thirdly, the SIOs found the RTW-plans unspecific and not helpful for their statutory reassessments (Interviews, September and November, 2008, and January, 2009).

Reach

Since the intervention protocol estimated a total of 200 participants per year, 152 participants in 9 months is in line with expectations. Of the 152 participants recruited, 29 chose to decline the offer, eight returned to work before start, three were excluded by the multidisciplinary team due to the severity of their disorder, one moved, and five dropped out for reasons not registered, resulting in 106 actual participants.

Fidelity

Based on data from the intervention protocol and interviews with the multidisciplinary team and intervention management, we identified five mechanisms assumed to promote RTW and symptom reduction: (1) early identification of participants; (2) multi-disciplinary assessment; (3) focus on barriers and resources for RTW; (4) coordination of stakeholders; and (5) regular adjustments of RTW-plans (Fig. 1). The following sections describe the implementation in terms of fidelity towards this model of the intervention. "Early identification of participants", however, is described in the section on 'Recruitment'.

Multi-Disciplinary Assessment

The multidisciplinary team consisted of a social worker, a psychologist, a physiotherapist, and an occupational physician, as outlined in the protocol. The social worker acted as a case coordinator, responsible for gathering information about the participants and communicating with the SIOs; the physiotherapist and physician assessed participants' physical health and functioning, while the psychologist assessed participants' psychological state and environmental circumstances, including working conditions. Our observations of the team conferences indicated that the team had created a multidisciplinary forum for cooperation, characterised by mutual professional respect. The team took a holistic approach when discussing individual

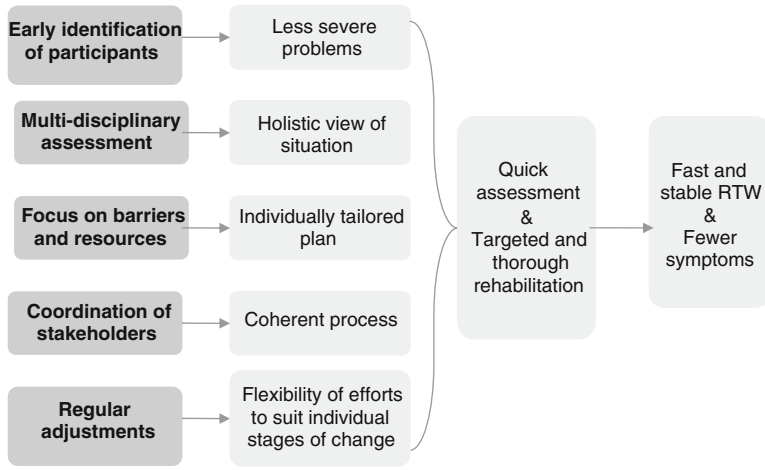

Fig. 1 Working mechanisms of the intervention

cases and considered diverse issues, such as "change of diet", "day-care options for disabled child", "support from partner", and "relationship with co-workers".

Focus on Barriers and Resources in Relation to RTW

Our observations of the multidisciplinary team conferences indicated that the team had a clear focus on barriers and resources for RTW related to the participant's personal characteristics and environment. These were also the main structuring elements in the RTW-plans, which all contained the headings "*Total barriers in relation to RTW*", "*Total resources in relation to RTW*", "*Plan for improvement of functioning*" and "*Plan for RTW*", covering a summary of barriers and resources and pointing to activities to overcome or enhance them.

Coordination with External Stakeholders

External stakeholders in the RTW-process included external healthcare professionals, employers, and labour unions. To coordinate efforts, the multidisciplinary team contacted the relevant external healthcare professionals [e.g. psychotherapist and general practitioner (GP)]. If an external psychotherapist was involved, the contact usually resulted in a division of labour, with the multidisciplinary team's psychologist addressing work-related issues and the external therapist addressing private issues. Coordination with GPs occurred mainly through sharing of the RTW-plan, but also by extending the participant's certified sick-leave (if deemed necessary for recovery) or by suggesting initiation or adjustment of medical treatment. Contact with employers only took place when the participant was still employed and agreed to have a third party involved. In such cases, a member of the multidisciplinary team participated in meetings with the employer and assisted in negotiating working conditions or terms of termination. Coordination with labour unions occurred mainly in cases of conflicts (Interviews, September, 2008; observations; RTW-plans).

Coordination with the SIOs

Coordination with the SIOs took place through three channels: (1) regular meetings between the multidisciplinary team and a group of designated SIOs; (2) an on-line database for sharing of the case documents created by the team (RTW-plans, monthly status briefs, and final reports); and (3) ad hoc contact (Interviews, November 2008, and April, 2009).

Regular Adjustments of the RTW-Plan

The multidisciplinary team held follow-up conferences every fourth week to monitor participants' progress and discuss adjustments of RTW-plans. According to the team, this praxis made the rehabilitation process flexible and responsive to the participants' development (Interviews, September and October 2008).

Dose Delivered

All participants included in the evaluation participated in a work disability screening, consisting of interviews with each of the rehabilitation professionals. The screening and subsequent team conference resulted in a RTW-plan, addressing barriers and resources for RTW. Table 3 gives an overview of the activities listed in the plans. The most common activities were sessions with the team's psychologist and physiotherapist and help with planning of physical activities. In contrast, coordination of efforts with external stakeholders (including employers) appeared only rarely in the plans. This finding is corroborated by the survey, in which only one respondent (3%) reported that a health professional had visited their work place.

The multidisciplinary team followed all participants for 12 weeks, although the degree of contact varied. Every fourth week the team made a status brief on the participant's progress. All cases were concluded with a final report, summarising the participant's rehabilitation process and current situation. These documents were shared with the participant, their GP, and the SIOs, although sometimes with considerable delay (see "*Dose received*"). During the

Table 3 Activities of intervention according to RTW-plans

Activities and the proportion of their appearance in the 70 RTW-plans	% (n)
Sessions with the multidisciplinary team[a]	
Sessions with psychologist	90 (63)
Sessions with physiotherapist	67 (47)
Sessions with social worker	23 (16)
Planning of daily activities	
Help with planning of physical activity	56 (39)
Help with planning of everyday/domestic activities	13 (9)
Coordination with external stakeholders	
Coordination with external psychiatrist	10 (7)
Coordination with external psychologist	9 (6)
Coordination with labour union	10 (7)
Coordination with employer	23 (16)
Individual and group based courses[b]	
Stress management	16 (11)
Communication/conflict resolution	10 (7)
Pain management	4 (3)
Relaxation training	21 (15)

[a] Additional to the initial work disability screening

[b] Arranged/carried out by the multidisciplinary team

evaluation period, the document sharing system was improved to allow the SIOs timely access to more detailed information.

Dose Received

Participants' Experiences

In general, the interviewees welcomed the intervention as an offer of help. However, many participants experienced a long wait between recruitment and screening, which left them surprised and somewhat frustrated: "These were months where I really needed help… then I could have recovered much quicker" (Interview 1).

Several of the interviewees found the work disability screening the best part of the intervention, allowing them to tell their story and "be heard" by someone who acknowledged their problems and "looked at them from several angles" (Interviews 1, 2 and 4). On the other hand, some found the "confrontation with so many unfamiliar faces" "overwhelming" and "unpleasant" (Interviews 6 and 9). The interviewees were most positive about the psychologist sessions and the courses in stress management. Most of the interviewees were already receiving psychotherapy when entering the intervention (Interviews 1–9), and while some perceived the team's psychologist as an additional help, (Interview 4), others were unsure about the purpose of seeing a second psychologist (Interviews 2 and 7).

The multidisciplinary team developed RTW-plans for all participants, but several interviewees did not receive their plan until weeks into the intervention (Interviews 4–6 and 10). The interviewees expressed divergent opinions of the plans—some expected more activities and/or more concrete details (Interview 1, 6 and 7), while others were pleased that the plan contained an accurate description of their situation and was flexible (Interviews 7 and 8). In the survey, ten respondents (27%) reported that a clear plan was made for their RTW, and 16 (43%) felt sufficiently informed.

Several interviewees reported that they initially intended to return to their job earlier or with more hours than recommended by the multidisciplinary team, who "…helped pull the break and say: "*This must go slowly*""—advice which the participants later came to appreciate (Interviews 2–4 and 9).

The SIOs' Experiences

The SIOs clearly stated that they needed RTW-efforts for recipients with MHPs, but that the intervention did not meet this need properly. There were several reasons for the SIOs dissatisfaction. Firstly, they found the inclusion criteria too narrow. It was difficult for them to find participants who had ties to the labour market (employed or newly unemployed), had one of the required diagnoses, were not too severely ill, and were still at risk of prolonged sickness absence and thus in need of an intervention (Interview, November 2008). In other words, the intervention's target population was not those which the SIOs found most difficult helping back to work. Secondly, the SIOs were not satisfied with the format of the documentation received from the multidisciplinary team. The documents did not specify the assessments made by the individual rehabilitation professionals but presented only a summary of the plan and activities completed. The SIOs requested more timely and detailed feedback on participants' status and progress, tailored to their needs in relation to the statutory reassessments (Interviews, September 2008, and January 2009). These requests were sought accommodated during the evaluation period by the introduction of a more advanced document sharing system, to which the SIOs had direct access. Our final interviews with the SIOs, however, did not indicate any changes in satisfaction. Thirdly, the SIOs found the timeframes for RTW too long. Consequently, the SIOs felt that they and the multidisciplinary team were working towards different goals, i.e. RTW as soon as possible versus more comprehensive rehabilitation (Interview with SIOs, November 2008). This apparent discrepancy in goals was reflected in the survey, where only 14 (38%) respondents reported that the different stakeholders involved in the RTW-process agreed on what actions to take.

Context

The interviews indicated that the recruitment procedure was influenced by the knowledge and attitude towards the intervention of the individual SIOs. Although there was substantial overlap between SIOs, each SIO appeared to have their own strategy for assessing a potential participant's suitability for the intervention. For example, one SIO stated: "For me it's sort of a lucky punch to find someone fulfilling all the criteria" (Interview, November 2008), while another stated: "I don't even look through all the criteria before I refer someone" (Interview, November 2008). The ability to assess both type and severity of MHPs is also likely to have varied between SIOs depending on their previous experience.

The inadequate information flow from the multidisciplinary team to the SIOs may partly have been a consequence of the job centre's internal organisation. Originally, the group of SIOs who recruited participants were different from the group of SIOs responsible for following up on participants. This structure was changed at the end of the evaluation period, so that each SIO kept responsibility for

their participants throughout the intervention (or as long as they remained sick-listed). Unfortunately, the change took place too late for the evaluation to capture any effects hereof.

Finally, it is likely that the implementation process was influenced by the global financial downturn in 2008, which may have affected the unemployment rates among participants. According to the multidisciplinary team, the fact that the municipality did not allow sickness absence compensation recipients to have their work ability assessed in a temporary job, posed a significant limitation to the RTW-efforts available to the unemployed participants (Interview, October 2008).

Discussion

The purpose of this study was to assess the implementation, feasibility and potential sustainability of a RTW-intervention for employees with common MHPs. We found that several factors, particularly regarding cooperation between the multidisciplinary team and the SIOs, obstructed implementation and challenged the feasibility and sustainability of the intervention.

The SIOs recruited the expected number of participants, but a substantial proportion dropped out (30%) and the participants differed from the expected target group, i.e. had more severe symptoms and included the unemployed. The recruitment process was influenced by individual differences in experiences and preferences among the SIOs, and it is possible that the global financial downturn influenced both the prevalence and severity of mental health symptoms, and the risk of job loss [22, 23]. A previous feasibility study of a RTW-intervention for employees with MHPs recommended careful consideration of inclusion criteria to avoid drop-outs, and to ensure that those responsible for recruitment perceive the intervention as useful [24]. This is in line with our findings, which point to specification of inclusion criteria in cooperation with the users of the intervention (SIOs) as one of the focal points for improvement.

While the composition of the multidisciplinary team and the structural processing of individual cases followed the plan, capacity constraints resulted in lengthy waiting lists. These were frustrating both for SIOs and participants and problematic in an intervention aiming to reduce the duration of sickness absence. In general, participants were positive about the intervention and had good experiences with the multidisciplinary team, but they did not perceive the intervention as a coordinated effort offering a clear plan for RTW. The perception of the intervention as somewhat unfocused may arise from the discrepancies between the needs and expectations of the SIOs and the praxis of the multidisciplinary team. As Young et al. [10] have pointed out, the motivation for safe and sustainable RTW is likely to differ between those who pay for the sickness absence and those who do not, with the payers' motivation more closely aligned with the financial imperative. It appeared that the SIOs' focus was on fast RTW and less on sustainable rehabilitation, while the multidisciplinary team prioritised sustainability over fast RTW.

The cooperation was further hampered by an inadequate flow of information from the multidisciplinary team to the SIOs, decreasing the SIOs motivation to recruit participants. The subsequent improvement of the document sharing system was thus a necessary modification. Young et al. [10] suggest that stakeholder commitment and support for an intervention depends on the timely availability of information tailored to their specific needs and priorities. In a similar vein, a recent process evaluation of a RTW-intervention for unemployed workers with musculoskeletal disorders found that unclear communication of the intervention's main goals was a barrier, while the use of a computerised system to ensure sufficient communication between professionals facilitated implementation [25]. The same study also found that lack of employment opportunities was an added barrier specific to the RTW-efforts aimed at workers without an employment contract. Those results are echoed in our findings that the SIOs' attitude towards the intervention and motivation to recruit participants was negatively influenced by insufficient information from the multidisciplinary team, and that unemployed participants posed an additional challenge for the implementation of the intervention as intended.

Practical Implications

Our findings add to the growing body of literature emphasising the difficulty *and* importance of ensuring effective communication between stakeholders and establishing a common view of the necessary steps towards RTW, regardless of the reason for absence [24–28]. We found that inadequate communication both before and during implementation of the intervention led to discrepant expectations, which impeded constructive cooperation with key stakeholders in the RTW-process—the municipal SIOs. Constructive cooperation with the SIOs is vital to the sustainability of RTW-interventions in Denmark and other countries with similar social insurance systems. In countries with different social insurance systems, however, employers, occupational health physicians, or private insurers may occupy key roles as users of RTW-interventions.

Several practical implications can be derived from our findings and applied to the development of future RTW-interventions implemented in bi-organisational contexts: (1) Recruiters need adequate knowledge about the content

and goal of the intervention, and about the progress towards the goal, as a lack of knowledge may decrease motivation to recruit participants and decrease adherence to inclusion criteria; (2) inclusion criteria should reflect user needs and competencies; (3) efforts must be made to avoid bottlenecks at any point; (4) adequate resources should be allocated throughout the intervention to ensure continuous commitment and support from stakeholders; (5) the intermediate and final outcomes of the intervention (including documents produced) must meet the needs of local stakeholders; (6) interventions should be flexible enough to accommodate changing contextual barriers for implementation (e.g. unemployment).

Strengths and Limitations of the Study

This study benefited from triangulation of data sources and analytical approaches. Nevertheless, the attrition of data due to reliance on the SIOs for the distribution of the baseline questionnaire, and the low response rate for the follow-up questionnaire pose limits to the generalisability of our findings. It might also have been useful to include the perspectives of employers in the study. However, as a large proportion of participants were unemployed and only a small proportion of RTW-plans included employer contact, we did not consider employer interviews a feasible source of data. Finally, a weakness applying both to the interventions' design and to our assessment of its implementation is that recruitment was based on self-reported reasons for absence, while the inclusion criteria were based on psychiatric diagnoses. As we did not have access to medical diagnoses on participants, we were not able to assess this aspect of criteria adherence.

Conclusions

This study demonstrates the importance of conducting systematic process evaluations to identify barriers to implementation and thus assess the feasibility and sustainability of interventions. Our findings point to important pitfalls, such as changing characteristics of the target population, waiting lists, and differing goals and expectations among stakeholders, all of which may have negative implications for the desired outcome and for sustainable integration of the intervention in daily praxis. By thoroughly investigating target population characteristics, contextual constraints, and the needs and expectations of local stakeholders, practitioners may improve the design and implementation of future RTW-interventions.

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References

1. van der Klink JJL, Blonk RWB, Schene AH, van Dijk FJH. Reducing long term sickness absence by an activating intervention in adjustment disorders: a cluster randomised controlled design. Occup Environ Med. 2003;60:429–37.
2. Brouwers EPM, Tiemens BG, Terluin B, Verhaak PFM. Effectiveness of an intervention to reduce sickness absence in patients with emotional distress or minor mental disorders: a randomized controlled effectiveness trial. Gen Hosp Psychiatry. 2006; 28:223–9.
3. de Vente W, Kamphuis JH, Ernmelkamp PMG, Blonk RWB. Individual and group cognitive-behavioral treatment for work-related stress complaints and sickness absence: a randomized controlled trial. J Occup Health Psychol. 2008;13:214–31.
4. Grossi G, Santell B. Quasi-experimental evaluation of a stress management programme for female county and municipal employees on long-term sick leave due to work-related psychological complaints. J Rehabil Med. 2009;41:632–8.
5. Netterstrøm B, Bech P. Effect of a multidisciplinary stress treatment programme on the return to work rate for persons with work-related stress. A non-randomized controlled study from a stress clinic. BMC Public Health. 2010;10:658.
6. Lander F, Friche C, Tornemand H, Andersen JH, Kirkeskov L. Can we enhance the ability to return to work among workers with stress-related disorders? BMC Public Health. 2009;9:372.
7. Fleten N, Johnsen R. Reducing sick leave by minimal postal intervention: a randomised, controlled intervention study. Occup Environ Med. 2006;63:676–82.
8. Loisel P, Durand MJ, Berthelette D, Vezina N, Baril R, Gagnon D, et al. Disability prevention—new paradigm for the management of occupational back pain. Dis Manag Health Outc. 2001;9:351–60.
9. Labriola M. Conceptual framework of sickness absence and return to work, focusing on both the individual and the contextual level. Work. 2008;30:377–87.
10. Young AE, Wasiak R, Roessler RT, McPherson KM, Anema JR, van Poppel MNM. Return-to-work outcomes following work disability: stakeholder motivations, interests and concerns. J Occup Rehabil. 2005;15:543–56.
11. Cornelius LR, van der Klink JJ, Groothoff JW, Brouwer S. Prognostic factors of long term disability due to mental disorders: a systematic review. J Occup Rehabil. 2011;21:259–74.
12. May CR, Mair FS, Dowrick CF, Finch TL. Process evaluation for complex interventions in primary care: understanding trials using the normalization process model. BMC Fam Pract. 2007;8:42.
13. Bültmann U, Sherson D, Olsen J, Hansen CL, Lund T, Kilsgaard J. Coordinated and tailored work rehabilitation: a randomized controlled trial with economic evaluation undertaken with workers on sick leave due to musculoskeletal disorders. J Occup Rehabil. 2009;19:81–93.
14. Høgelund J, Holm A. Case management interviews and the return to work of disabled employees. J Health Econ. 2006;25:500–19.
15. Høgelund J, Boll J, Schou M, Jensen S. Effekter af ændringerne i sygedagpengeloven. Opfølgning på sygedagpenge [Effects of changes in the public sickness benefit scheme. Follow-up on sickness benefits]. København, SFI-Det Nationale Forskningscenter for Velfærd. [Danish]; 2008.
16. Loisel P, Durand P, Abenhaim L, Gosselin L, Simard R, Turcotte J, et al. Management of occupational back pain—the Sherbrooke

model—results of a pilot and feasibility study. Occup Environ Med. 1994;51:597–602.
17. Prochaska JO, Diclemente CC. Stages of change in the modification of problem behaviors. Prog Behav Modif. 1992;28:183–218.
18. Saunders RP, Evans MH, Joshi P. Developing a process-evaluation plan for assessing health promotion program implementation: a how-to guide. Health Prom Pract. 2005;6:134–47.
19. Bech P, Rasmussen NA, Olsen LR, Noerholm V, Abildgaard W. The sensitivity and specificity of the Major Depression Inventory, using the Present State Examination as the index of diagnostic validity. J Affect Disord. 2001;66:159–64.
20. Derogatis LR. SCL-90-R. Administration, scoring and procedures. MANUAL-II. Townson, MD; 1983.
21. NVivo qualitative data analysis software. Version 8. QSR International Pty Ltd; 2008.
22. Nebehay S. Financial crisis may increase mental health woes [Internet]. Reuters. 2008 [cited 2011 Jul 6]. Available from: http://www.reuters.com/article/2008/10/09/us-financial-health-mental-idUSTRE49839M20081009.
23. Uutela A. Economic crisis and mental health. Curr Opin Psychiatry. 2010;23:127–30.
24. van Oostrom SH, van Mechelen W, Terluin B, de Vet HC, Anema JR. A participatory workplace intervention for employees with distress and lost time: a feasibility evaluation within a randomized controlled trial. J Occup Rehabil. 2009;19:212–22.
25. van Beurden KM, Vermeulen SJ, Anema JR, van der Beek AJ. A participatory return-to-work program for temporary agency workers and unemployed workers sick-listed due to musculoskeletal disorders: a process evaluation alongside a randomized controlled trial. J Occup Rehabil. 2011;21:313–24.
26. Briand C, Durand MJ, St Arnaud L, Corbiere M. Work and mental health: learning from return-to-work rehabilitation programs designed for workers with musculoskeletal disorders. Int J Law Psychiatry. 2007;30:444–57.
27. Loisel P, Abenhaim L, Durand P, Esdaile JM, Suissa S, Gosselin L, et al. A population-based, randomized clinical trial on back pain management. Spine. 1997;22:2911–8.
28. Friesen MN, Yassi A, Cooper J. Return-to-work: the importance of human interactions and organizational structures. Work. 2001;17:11–22.

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Effectiveness of a Coordinated and Tailored Return-to-Work Intervention for Sickness Absence Beneficiaries with Mental Health Problems

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Abstract *Purpose* Sickness absence and exclusion from the labour market due to mental health problems (MHPs) is a growing concern in many countries. Knowledge about effective return-to-work (RTW) intervention models is still limited, but a multidisciplinary, coordinated and tailored approach has shown promising results in the context of musculoskeletal disorders. The purpose of this study was to assess the effectiveness of this approach as implemented among sickness absence beneficiaries with MHPs. *Methods* In a quasi-randomised, controlled trial, we assessed the intervention's effect in terms of time to RTW and labour market status after 1 year. We used two different analytical strategies to compare time to RTW between participants receiving the intervention (n = 88) and those receiving conventional case management (n = 80): (1) a traditional multivariable regression analysis controlling for measured confounding, and (2) an instrumental variable (IV) analysis controlling for unmeasured confounding. *Results* The two analytical approaches provided similar results in terms of a longer time to RTW among recipients of the intervention (HR = 0.50; 95 % CI 0.34–0.75), although the estimate provided by the IV-analysis was non-significant (HR = 0.70; 95 % CI 0.23–2.12). After 1 year, more recipients of the intervention than of conventional case management were receiving sickness absence benefits ($p = 0.031$). *Conclusion* The intervention delayed RTW compared to conventional case management, after accounting for measured confounding. The delayed RTW may be due to either implementation or program failure, or both. It may also reflect the complexity of retaining employees with mental health problems in the workplace.

Keywords Return to work · Sickness absence · Mental health · Intervention effectiveness

Introduction

Sickness absence due to mental health problems (MHPs), such as depression, anxiety, and stress-related disorders, are increasing in many high-income countries, contributing substantially to disability benefits and permanent exclusion from the labour market [1]. Interventions to promote return-to-work (RTW) among employees sick-listed with MHPs are thus a public health priority.

The majority of RTW-interventions aimed at sickness absence beneficiaries with MHPs involve some form of cognitive-behavioural treatment to improve coping skills in relation to work [2–5]. In addition, some interventions include contact with the workplace, or promotion hereof [2, 6–8]. While interventions focusing only on treatment of the MHP have not demonstrated positive effects on RTW [3–5, 9, 10], interventions aiming at restoring contact with the workplace have shown more promising results [2, 6–8].

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A multidisciplinary, coordinated and tailored RTW-intervention may be the most promising approach for achieving a fast and safe RTW [11]. In a recent Danish study, Bültmann et al. [12] found that this type of intervention reduced time to RTW among employees with musculoskeletal disorders. Whether this type of intervention also improves RTW among employees with MHPs has not yet been tested.

In intervention research, the randomised controlled trial (RCT) is the "gold standard"[13]. However, RCTs are often unfeasible in community settings because of costs or entrenched practice patterns [14, 15], leaving many studies at risk of biased estimates due to differences in baseline characteristics between the intervention and control group. Careful statistical analyses can reduce bias caused by confounding, but traditional approaches of stratification or adjustment in regression analyses require that all confounders are accurately measured. This is particularly challenging in RTW-intervention research, because RTW is a complex, multifactorial process [16, 17], and accurately measuring all possible confounders is virtually impossible. Instrumental variable (IV) analysis—a technique borrowed from econometrics—addresses this problem by mimicking an RTC and rendering further confounder adjustment unnecessary [18]. The idea is that the causal effect of exposure on outcome can be captured via the relationship between exposure and another, exogenous variable that predicts exposure [14, 15]. A valid IV-analysis requires an instrument that is (1) correlated with the exposure, (2) only indirectly related to the outcome through the exposure, and (3) not associated with any unmeasured confounders in the study population [19, 20]. In healthcare research, IV-analyses are increasingly used. For example, drug co-payment has been used as an instrument for analysing the effect of beta-blocker adherence on clinical outcomes [21, 22]. For a more detailed description with further examples see Brookhart et al. 2010 [22].

In this article we present results from a quasi-randomised controlled RTW-intervention study among sickness absence beneficiaries with MHPs implemented in a municipal setting. The intervention was based on the principles of coordinated and tailored work rehabilitation (CTWR), following the approach evaluated by Bültmann et al. [12] among employees with musculoskeletal problems. We hypothesised that participants in the intervention group would return to work faster than participants in the reference group, who received conventional case management. As the study was not randomised, we estimated the effects on RTW using two different analytical approaches to account for bias caused by confounding: a traditional multivariable analysis adjusted for potential confounders measured at baseline, and an IV analysis to account for unmeasured confounding.

Methods

Setting

The Danish sickness benefit legislation covers wage-earners, self-employed and unemployed residents for a maximum of 52 weeks at a time. Employers pay full wages for the first 3 weeks of absence. Thereafter, employers can claim compensation for part of the wage from the local municipality. It is possible for employers to dismiss a sick-listed employee. Social insurance officers (SIOs) in municipal jobcentres are responsible for evaluating and monitoring all benefit recipients and for initiating RTW-efforts. The intervention was organised as a collaboration between a Danish municipal job centre and a private company specialising in CTWR. The SIOs in the municipal job centre recruited the participants, whereas the private company provided a multidisciplinary intervention team that delivered the intervention.

The Danish National Research Centre for the Working Environment (NRCWE) was contracted by the Danish National Prevention Fund to conduct an external evaluation of the intervention. The NRCWE-researchers—including the authors of this article—were not involved in the design and execution of the intervention.

In this article, we present the results from the effect evaluation of the intervention. The results of the process evaluation have been presented in a previous publication [23]. The study was approved and registered by the Danish Data Protection Agency (Registration number: 2008-54-0438).

Recruitment Procedure

Participants were recruited by the SIOs in the job centre at the initial mandatory assessment interview, which takes place within the first 8 weeks of sickness absence. We suggested an RCT-design for the study. However, both the municipality and the intervention team deemed an RCT unfeasible for integration in the jobcentre's daily practice. Therefore, we instructed the SIOs to allocate participants to the intervention group on Mondays and Tuesdays and to the reference group on Wednesdays and Thursdays. Consequently, on Mondays and Tuesdays, the SIOs informed eligible beneficiaries of the intervention and invited them to participate. Participation was voluntary, and to the best of our knowledge, beneficiaries were not threatened that non-participation could affect further eligibility for sickness absence benefits. If consent was given, the SIOs referred participants to the multidisciplinary team immediately through an electronic system. Eligible beneficiaries in both groups received a questionnaire for the assessment of sociodemographic, occupational and health-related factors.

Recruitment took place between May 2008 and January 2009 according to the following inclusion criteria, determined by the rehabilitation company before the start of the study: Employees aged 20–60, sick-listed for 4–12 weeks due to a common MHP, defined as mood disorders (ICD-10: F30–39), neurotic, stress-related or somatoform disorders (ICD-10: F40–48) or related conditions not specified in the ICD-10, e.g. burnout [24]), and no co-morbid psychotic conditions. The assessment whether or not a beneficiary qualified for one of these diagnoses were made by the SIO's based on the beneficiary's self-report. This reflects the common practice in Danish job centres, where reason for sickness absence is generally not established based on physicians' certificates, but on beneficiaries' self-report.

During the evaluation period, and on the SIOs request, the multidisciplinary team agreed to also include participants who had recently lost their job.

Variables

Coordinated and Tailored Work Rehabilitation (CTWR)

The CTWR-intervention lasted for a maximum of 12 weeks and included the following elements: (1) a work disability screening, conducted by a multidisciplinary team, to assess disability and functioning and barriers and resources for RTW in accordance with the International Classification of Functioning, Disability and Health (ICF) [25], (2) an action plan for RTW, including proposed activities to overcome barriers and strengthen resources (e.g. stress management training, physical exercise, contact with the workplace), and (3) implementation of the action plan and regular updates according to the individual's current situation. The intervention team's clinical psychologist offered consultation to participants if deemed necessary. Formal psychotherapy, e.g. cognitive-behavioural therapy, was not part of the intervention. A more detailed description of the intervention can be found in the process evaluation [23].

Conventional Case Management (CCM)

The municipal SIOs are obliged to assess and monitor all sickness absence beneficiaries regularly. This involves interviewing all beneficiaries within the first 8 weeks of absence and evaluating their RTW prognosis, based on the available medical, social and vocational information. Frequent follow-up assessments must be conducted for beneficiaries at high risk of prolonged absence. The SIOs are in charge of initiating efforts to improve or retain the beneficiaries' labour market attachment, such as granting supplementary benefits while resuming work on reduced hours, wage subsidised job-training, and further education. Additionally, all Danish residents have free and unlimited access to a general practitioner (GP). Psychiatric treatment in hospitals is free upon referral from a GP, however lengthy waiting lists are common [26]. Treatment by private psychotherapists is subject to patient charges.

Time to RTW

Time to RTW was measured from the first day of sickness absence and ascertained by linking participants' social security number with the Danish register of sickness absence compensation and social transfer payments (RSS), which provides day-to-day information on sickness absence benefits [27]. We defined RTW as the transition from receiving sickness absence benefits to being self-supported. Participants who changed from receiving sickness absence benefits to receiving unemployment benefits were regarded as not returned to work. Participants were censored in the event of death, emigration, maternity leave, transition to any pension or education benefits, or at the end of follow-up, whichever came first. We followed each participant for 52 weeks, which is the general maximum period a person can receive sickness absence benefits.

Labour Market Status After One Year

We ascertained participants' labour market status after 1 year by linking to the RSS. We distinguished between being self-supported (i.e. receiving no social transfer payments), receiving unemployment benefits, receiving disability benefits, and being censored due to death, emigration, pensioning, maternity leave, or due to having entered further education.

Confounders

We included baseline variables assumed to influence the time to RTW, such as age, gender, employment status (employed vs. not employed) occupational class, self-reported reason for sickness absence, self-rated general health, self-rated work-ability, RTW-expectancy, mental health symptoms, sickness absence in previous year, and length of sickness absence at recruitment [28–31]. Age, gender, previous sickness absence and sickness absence at recruitment were obtained from the RSS; the remaining measures from the baseline questionnaire. We categorised occupational class according to the European Socio-economic Classification (ESeC) [32]. General health was assessed with an item from the MOS short-form health survey (SF-36) [33]. Work ability was assessed on a scale from 0 to 10, with 0 indicating the lowest possible work ability and 10 the highest. RTW-expectancy was assessed by asking

participants to rate their chance of being able to work within 6 months on a scale from 0 to 10, with 10 indicating the highest chance. Depressive symptoms were measured with the Major Depression Inventory (MDI [34]), and anxiety and somatisation were measured with subscales of the Symptom Checklist 90, revised version (SCL-90-R [35]).

Statistical Analyses

Our analyses followed the principle of intention-to-treat. We compared baseline characteristics between groups with Student's t test and the Mann–Whitney U-test for continuous variables and χ^2 tests for categorical variables. We used logistic regression to make group comparisons of status at the end of follow-up. We used Kaplan–Meier survival tables to estimate the median time to RTW and Cox proportional hazards regression to estimate hazard ratios for RTW (HR) and 95 % confidence intervals (95 % CI). To control for confounding we employed two strategies: a multivariable adjustment for variables measured at baseline, and an IV-analysis. The multivariable analysis was planned from the beginning of the study, while the idea of using an instrumental variable evolved during the course of the study, inspired by the growing literature on the use of IV-analyses in health research [14, 15, 20].

In the multivariable adjustment, model I was adjusted for the register-based variables age, gender, previous sickness absence, and sickness absence at recruitment. Model II was further adjusted for variables retrieved from the baseline questionnaire and was therefore only applied to participants who completed the baseline questionnaire without missing values on these variables. These variables were occupational class, employment status, depressive, anxiety and somatisation symptoms, general health, work ability and RTW-expectancy.

The study design provided a strong instrument for the IV-analysis. The weekday participants were recruited to the study (i.e. the day they attended the job centre for their initial assessment interview) was an exogenous variable predicting group allocation (Monday–Tuesday = CTWR, Wednesday–Thursday = CCM), and we could find no reason to believe that it was related to the time to RTW, except through its effect on group allocation. As such it could be used to obtain an unbiased estimate of the effect of treatment on RTW. A logistic regression provided the predicted probability of receiving CTWR based on recruitment day, which was then used as a continuous predictor of time to RTW in a Cox proportional hazards model with robust standard errors, not including any other covariates. The analyses were conducted in SAS 9.2 [2008] SAS Institute Inc., Cary, NC, USA and SPSS, version 20.0 (IBM Corp. Released 2011. IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp.).

Results

Final Study Sample

The SIOs recruited a total of 242 beneficiaries to the study. Of those individuals, 196 beneficiaries, 106 in CTWR and 90 in CCM, were registered, offered a baseline questionnaire, and thus included in the effect evaluation (Fig. 1). In CTWR, the multidisciplinary team excluded two participants due to the severity of their disorder, yielding an intention-to-treat sample of 104 participants. Of those, 70 participated in the intervention, 28 declined the offer for reasons not reported, two returned to work before the intervention started and four dropped out of the intervention.

When we linked the data to the RSS, we had to exclude 16 CTWR and 10 CCM participants, because of missing data or incongruence between the register data and the information from the SIOs. Thus, the final intention-to-treat sample consisted of 88 CTWR and 80 CCM participants. Of those individuals, 59 (67 %) CTWR and 56 (70 %) CCM participants completed the baseline questionnaire.

Baseline Characteristics of Participants

Table 1 presents the baseline characteristics of participants. There were no statistically significant differences between the groups in terms of sociodemographics or previous sickness absence. The CTWR-group reported higher levels of somatisation symptoms and lower work ability compared to the CCM-group.

As a further evaluation of the recruitment procedure, we compared participants recruited on Mondays and Tuesdays with participants recruited on Wednesdays and Thursdays. We did not find any statistically significant differences between these two groups (data not shown).

Time to RTW

Figure 2 depicts the unadjusted Kaplan–Meier curves for RTW in the two groups. The crude analysis shows that the CTWR-group returned slower to work throughout the follow-period compared to the CCM-group (HR = 0.58; 95 % CI 0.39–0.85).

Table 2 shows the results from the crude analysis, the adjusted analysis and the IV-analysis of time to RTW. We applied the analyses first to all participants and then to participants who completed the baseline questionnaire with no missing values.

In the analyses on all participants, we found a lower crude RTW rate in the CTWR-group (HR = 0.58; 95 % CI 0.39–0.85). Adjustment for age, gender, previous

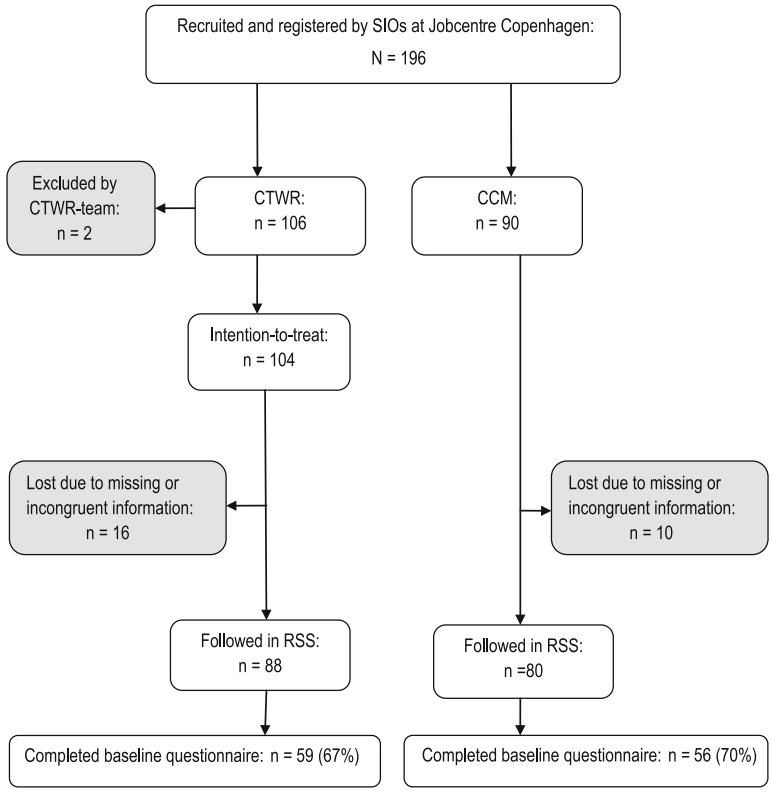

Fig. 1 Flowchart of participants from recruitment to final study sample. *SIO* Social insurance officer, *CTWR* Coordinated and tailored work rehabilitation, *CCM* Conventional case management, *RSS* Danish register of sickness absence compensation and social transfer payments [25]

sickness absence and length of sickness absence at inclusion (model I) changed the estimate only marginally (HR = 0.50; 95 % CI 0.34–0.75). In the IV-analysis, the effect-estimate decreased slightly. The confidence intervals became considerably wider, rendering the result statistically non-significant (HR = 0.70; 95 % CI 0.23–2.12).

In the analyses on participants with complete baseline questionnaire data, the results of the crude analysis and of the analysis adjusted for covariates (model I) were comparable to the results based on all participants. In this subgroup of participants, we further adjusted for variables measured in the questionnaire (model II), which increased the effect-estimate (HR = 0.44; 95 % CI 0.26–0.74) slightly. The IV-analysis showed a similar trend, however, once again wide confidence intervals rendered the result statistically non-significant (HR = 0.49; 95 % CI 0.17–1.38).

In addition to the intention-to-treat analyses, we also conducted analyses, in which we excluded those CTWR-participants, who had declined participation in the intervention (n = 28) or had dropped out (n = 4). These analyses yielded similar results to those of the intention-to-treat analyses (data available on request).

Labour Market Status After One Year

Table 3 shows that 35 % of participants in the CTWR-group were receiving sickness absence benefits at the end of follow-up (52 weeks), compared to 21 % of participants in the CCM-group ($p = 0.031$).

Discussion

We used two different analytical approaches to assess the effect of the CTWR-intervention among sickness absence beneficiaries with MHPs. Both analyses indicated that the intervention delayed RTW when compared to CCM.

Participants in the CTWR-group had poorer health at baseline, indicated by heightened somatisation symptoms and lower self-rated work ability. However, adjustment for these and numerous other baseline characteristics did not attenuate the effect size substantially. As the estimates were similar when accounting for unmeasured confounding (the IV-analysis), differences between participants in the intervention and the reference group at baseline are an

Table 1 Baseline characteristics of participants

Registry data	CTWR (n = 88)	CCM (n = 80)	*p*
Gender (%) (n)			
Women	78 (69)	83 (67)	0.379[a]
Men	22 (19)	17 (13)	
Age, mean (SD)	41 (10.2)	41 (9.2)	0.991[b]
Weeks on sickness absence at recruitment, mean (SD)	8 (3.2)	9 (3.9)	0.083[b]
Weeks on sickness absence in previous year, mean (SD)	1 (4.5)	1 (3.8)	0.597[b]
Day of recruitment (%) (n)			
Monday–Tuesday	69 (61)	35 (28)	<0.001[a]
Wednesday–Thursday	31 (27)	65 (52)	
Questionnaire data	**CTWR (n = 59)**	**CCM (n = 56)**	***p***
Occupational group (ESeC) (%)			
Managers and professionals	47 (28)	47 (26)	0.991[a]
Intermediate	39 (23)	39 (22)	
Working class	14 (8)	14 (8)	
Employed at baseline (%) (n)			
No	24 (14)	29 (16)	0.554[a]
Yes	76 (45)	71 (40)	
Self-reported reason for sickness absence (%) (n)			
Stress/burnout/chronic fatigue	61 (36)	59 (33)	
Depression	34 (20)	39 (22)	0.563[a]
Other (e.g. anxiety, bipolar disorder)	5 (3)	2 (1)	
SCL-ANX4 (0–4), mean (SD)	3.1 (1.1)	2.7 (1.2)	0.062[b]
SCL-SOM (0–12), mean (SD)	8.2 (3.0)	7.1 (2.6)	0.029[b]
MDI (0–50), mean (SD)	26.8 (10.0)	23.3 (10.6)	0.074[c]
General health perception (1–5), mean (SD)	2.6 (1.0)	2.5 (0.9)	0.608[b]
Self-rated work ability (0–10), mean (SD)	3.1 (2.5)	4.1 (2.4)	0.023[b]
RTW-expectancy (0–10), mean (SD)	7.7 (2.9)	8.1 (2.7)	0.330[b]
Day of recruitment			
Monday–Tuesday	73 (43)	30 (17)	<0.001[a]
Wednesday–Thursday	27 (16)	70 (39)	

SCL-ANX4 Symptom Checklist 90 Revised-Anxiety Scale, *SCL-SOM* Symptom Checklist 90 Revised-Somatic Distress Scale, *MDI* Major Depression Inventory

[a] χ^2 test

[b] Mann-Whitney U-test

[c] Student's *t* test

unlikely explanation of the results. However, because the concordance between day of recruitment and treatment allocation was not perfect (Table 1) and the sample size was relatively small, the uncertainty associated with the IV estimate is too large to completely eliminate unmeasured confounding as a possible explanation of the findings.

Implementation Failure or Program Failure?

We have previously published a comprehensive process evaluation of the intervention that provides some potential explanations for the unexpected results [23]. We found that waiting lists occurred in the intervention group, creating an average time span of 3 weeks between recruitment and work disability screening. Furthermore, the process evaluation showed that the SIOs had difficulties assessing both type and severity of MHPs, which created a rather heterogeneous intervention group in terms of MHPs [23]. Thus, although the intervention team in two cases excluded participants due to the severity of their disorder, we cannot rule out that the CTWR-group included some beneficiaries with severe psychiatric problems, including psychotic disorders. The waiting lists and the heterogeneity of MHPs in the intervention group may be regarded as implementation

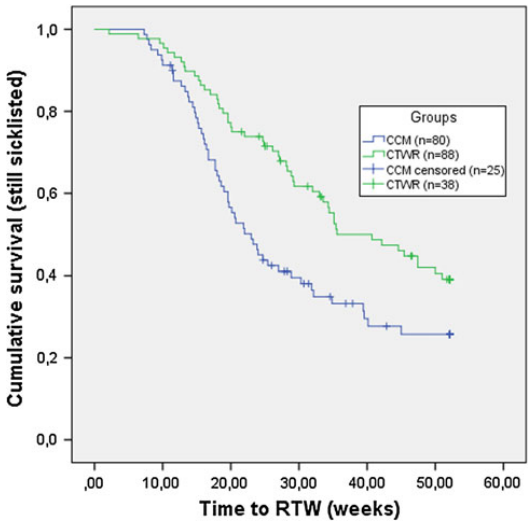

Fig. 2 Time to RTW from first day of sickness absence, crude ($p = 0.005$)

failures. Implementation failure is a common reason for inconclusive or negative findings in intervention studies [36, 37].

Besides implementation failures, program failures might explain the delayed RTW in the intervention group. Similar results to ours were found in a Danish intervention study that aimed to identify undetected or unreported psychiatric disorders among sickness absentees, followed up with advice for treatment and rehabilitation to the caregivers [9]. The authors of that study reasoned that the recognition of a psychiatric disorder may have offered legitimacy to remain sick-listed, thereby prolonging the time to RTW. Further, they proposed that providing advice for treatment may have postponed RTW by introducing waiting time for the results of the recommended measures (e.g. antidepressant medication or referral to psychotherapy). These explanations might be applied to our findings, as the intervention may have offered participants an opportunity to reassess their work situation with professional help that was not as readily available to recipients of CCM. Such reassessment may have resulted in the decision to make substantial changes, such as changing jobs, contributing to a delayed RTW. Unfortunately, we were not able to compare the extent to which participants in the two groups changed jobs during their sickness absence.

Interviews with the SIOs and the multidisciplinary team revealed divergent expectations of the timeframe for RTW. The SIOs focused primarily on a fast RTW, whereas the multidisciplinary team appeared to prioritise sustainable rehabilitation over a fast RTW. This interpretation was corroborated by several participants, who stated in interviews for the process evaluation that they had intended to return to work faster or with more hours, but were advised by the multidisciplinary team to take things slowly [23]. As the main outcome of the study was time to RTW, this appears surprising advice. The intervention team might have assumed that an initially slower RTW would benefit participants in the long run, in terms of better mental health and a more stable labour market attachment. However, this assumption could not be tested within the time frame of this evaluation.

Finally, it must be considered whether a stronger involvement of the workplaces in the intervention would have improved the results. In Denmark, responsibility for managing RTW lies primarily with the municipalities, whereas the workplaces are only marginally involved [38]. Although increasing stakeholder involvement was an aim of the intervention, the activities directed towards this aim were limited and may not have been sufficiently comprehensive to make a significant difference when compared to usual case management [23].

Table 2 Time to return to work during 52 week follow-up

	Median time to RTW (weeks)	Estimated HR (95 % CI)			
		Crude model	Model I	Model II	IV-analysis
All participants					
CCM (n = 80)	23	1.00	1.00	–	1.00
CTWR (n = 88)	36	0.58 (0.39–0.85)	0.50 (0.34–0.75)	–	0.70 (0.23–2.12)
Participants with complete baseline questionnaire data					
CCM (n = 56)	21	1.00	1.00	1.00	1.00
CTWR (n = 59)	35	0.56 (0.36–0.88)	0.47 (0.30–0.74)	0.44 (0.26–0.74)	0.49 (0.17–1.38)

Model II could only be calculated for participants who completed the baseline questionnaire

CCM Conventional case management, *CTWR* Coordinated and tailored work rehabilitation, *Model I* Adjusted for age, gender, previous sickness absence, and length of sickness absence at recruitment, *Model II* Further adjusted for occupational class, reason for sickness absence, depressive, anxiety and somatisation symptoms, general health perception, work ability and RTW-expectancy

Table 3 Labour market status after 1 year

Status, % (n)	Groups		p^a
	CTWR (n = 88)	CCM (n = 80)	
Self-supported (RTW)	51 (45)	63 (50)	0.092
Receiving sickness absence benefits	35 (31)	21 (17)	0.031
Receiving unemployment benefits	8 (7)	9 (7)	0.720
Receiving disability benefits	0 (0)	1 (1)	–
Other (further education, pension, maternity leave, emigration, death)	6 (5)	6 (5)	0.998

[a] Logistic regression adjusted for age, gender, sickness absence at recruitment and sickness absence in previous year

Implications for Practice

The CTWR-intervention has previously been successfully tested among employees with musculoskeletal disorders [12]. Likewise, the Sherbrooke-model, on which the CTWR-intervention is based, has predominantly been tested in the context of musculoskeletal disorders [39]. Our results indicate that these intervention strategies are not immediately transferable to sickness absence due to other causes, and that the potential benefits of a complex, multidisciplinary intervention for sickness absence beneficiaries with MHPs should be weighed against the risk of a delayed RTW. Sickness absence due to MHPs may be qualitatively different from sickness absence due to musculoskeletal disorders. While musculoskeletal disorders may be primarily associated with physical aspects of the working environment, such as heavy lifting or repetitive movements [40], MHPs areassociated with the psychosocial work environment, such as imbalance between demands, resources, and rewards, or interpersonal conflicts at work [41–43]. The more (inter)personal and marginalising nature of MHPs and the consequences related to their disclosure may complicate relations with the workplace. Although the stigma attached to MHPs appears to have decreased in the past few decades [44], employees with MHPs are still less favourably perceived and less likely to be retained in the workplace than employees with physical disabilities [45].

Strengths and Limitations of the Study

We would have preferred an RCT design for this study. However, neither the municipality nor the intervention team found an RCT feasible, because of potential disturbances to the daily practice in the job centre. Consequently, we used both a conventional analysis adjusted for a range of measured potential confounders, and an IV-analysis addressing unmeasured confounding. We regarded this analytic strategy as the best option available given the circumstances.

In the analyses adjusted for all measured confounders, we lost 53 participants (29 in CTWR and 24 in CCM) who did not complete the questionnaire. These losses could have biased the results if failure to complete the questionnaire was associated with time to RTW. However, our analyses showed that the difference in time to RTW was virtually identical in the analysis with all participants compared to the analysis with participants with completed baseline questionnaire only (Table 2, model I). Hence, we consider it unlikely that our analyses were biased by this non-response.

We used the weekdays participants were recruited to the study as the instrument in the IV-analysis. As we had expected, day of recruitment was quite strongly associated with assignment to either CTWR or CCM. However, the association was not perfect. Interviews with SIOs revealed that participants were sometimes assigned to CTWR also on Wednesdays and Thursdays, if not enough CTWR-participants had been recruited on the previous Monday and Tuesday. We could not identify a systematic reason why participants who attended the job centre on Mondays and Tuesdays were sometimes assigned to CCM and not CTWR.

Our study would have benefited from the inclusion of partial RTW as an outcome, as partial RTW has been shown to increase the likelihood of returning to regular working hours [46]. Unfortunately, such data were not available. Further, we examined first RTW, but it is possible that while the CTWR-intervention did not facilitate a fast first RTW, it may facilitate a more stable RTW in terms of less recurrent sickness absence. This hypothesis will be investigated in future analyses with an extended follow-up period.

Conclusion

The CTWR-intervention did not lead to faster RTW among sickness absence beneficiaries with mental health problems when compared to CCM. On the contrary, the intervention appeared to prolong participants' time on sickness absence benefits. Possible explanations include implementation failure, such as (a) waiting time between recruitment and work disability screening, (b) inclusion of participants with types and severities of MHPs that were not suitable for the intervention; and program failure, such as (c) added legitimacy of sickness absence during participation, (d) more time-consuming reassessments of working situations in the intervention group, (e) focus of the intervention team on sustainable rehabilitation over fast RTW, (f) insufficient involvement of the workplaces. The findings warrant further examination of the intervention's effect on the

sustainability of RTW, for example in terms of recurrent sickness absence.

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References

1. OECD. Sickness, disability and work: breaking the barriers. A synthesis of findings across OECD countries. Paris: OECD Publishing; 2010.
2. van der Klink JJL, Blonk RWB, Schene AH, van Dijk FJH. Reducing long term sickness absence by an activating intervention in adjustment disorders: a cluster randomised controlled design. Occup Environ Med. 2003;60:429–37.
3. Brouwers EPM, Tiemens BG, Terluin B, Verhaak PFM. Effectiveness of an intervention to reduce sickness absence in patients with emotional distress or minor mental disorders: a randomized controlled effectiveness trial. Gen Hosp Psychiatry. 2006;28:223–9.
4. de Vente W, Kamphuis JH, Ernmelkamp PMG, Blonk RWB. Individual and group cognitive-behavioral treatment for work-related stress complaints and sickness absence: a randomized controlled trial. J Occup Health Psychol. 2008;13:214–31.
5. Willert MV, Thulstrup AM, Bonde JP. Effects of a stress management intervention on absenteeism and return to work—results from a randomized wait-list controlled trial. Scand J Work Env Health. 2011;37:186–95.
6. van Oostrom SH, van Mechelen W, Terluin B, de Vet HC, Knol DL, Anema JR. A workplace intervention for sick-listed employees with distress: results of a randomised controlled trial. Occup Environ Med. 2010;67:596–602.
7. Fleten N, Johnsen R. Reducing sick leave by minimal postal intervention: a randomised, controlled intervention study. Occup Environ Med. 2006;63:676–82.
8. Netterstrøm B, Bech P. Effect of a multidisciplinary stress treatment programme on the return to work rate for persons with work-related stress. A non-randomized controlled study from a stress clinic. BMC Public Health. 2010;10:658.
9. Søgaard HJ, Bech P. The effect on length of sickness absence by recognition of undetected psychiatric disorder in long-term sickness absence. A randomized controlled trial. Scand J Public Health. 2009;37:864–71.
10. Nieuwenhuijsen K, Bültmann U, Neumeyer-Gromen A, Verhoeven AC, Verbeek JH, van der Feltz-Cornelis CM. Interventions to improve occupational health in depressed people. Cochr Database System Rev. 2008;2:CD006237.
11. Borg V, Nexø M, Kolte I, Andersen M. Hvidbog om mentalt helbred, sygefravær og tilbagevenden til arbejde [White paper on mental health, sickness absence and return to work] [Danish]. Copenhagen: The National Research Centre for the Working Environment; 2010.
12. Bültmann U, Sherson D, Olsen J, Hansen CL, Lund T, Kilsgaard J. Coordinated and tailored work rehabilitation: a randomized controlled trial with economic evaluation undertaken with workers on sick leave due to musculoskeletal disorders. J Occup Rehabil. 2009;19:81–93.
13. Bonell CP, Hargreaves J, Cousens S, Ross D, Hayes R, Petticrew M, et al. Alternatives to randomisation in the evaluation of public health interventions: design challenges and solutions. J Epidemiol Community Health. 2011;65:582–7.
14. Earle CC, Tsai JS, Gelber RD, Weinstein MC, Neumann PJ, Weeks JC. Effectiveness of chemotherapy for advanced lung cancer in the elderly: instrumental variable and propensity analysis. J Clin Oncol. 2001;19:1064–70.
15. Martens EP, Pestman WR, de Boer A, Belitser SV, Klungel OH. Instrumental variables application and limitations. Epidemiology. 2006;17:260–7.
16. Loisel P, Durand MJ, Diallo B, Vachon B, Charpentier N, Labelle J. From evidence to community practice in work rehabilitation: the Quebec experience. Clin J Pain. 2003;19:105–13.
17. Nielsen MBD, Bultmann U, Madsen IEH, Martin MHT, Christensen U, Diderichsen F, et al. Health, work, and personal-related predictors of time to return to work among employees with mental health problems. Disabil Rehabil. 2012;34:1311–6.
18. Hernan MA, Robins JM. Instruments for causal inference: an epidemiologist's dream? Epidemiology. 2006;17:360–72.
19. Angrist JD, Imbens GW, Rubin DB. Identification of causal effects using instrumental variables. JASA. 1996;91:444–55.
20. Cousens S, Hargreaves J, Bonell C, Armstrong B, Thomas J, Kirkwood BR, et al. Alternatives to randomisation in the evaluation of public-health interventions: statistical analysis and causal inference. J Epidemiol Community Health. 2011;65:576–81.
21. Cole JA, Norman H, Weatherby LB, Walker AM. Drug copayment and adherence in chronic heart failure: effect on cost and outcomes. Pharmacotherapy. 2006;26:1157–64.
22. Brookhart MA, Rassen JA, Schneeweiss S. Instrumental variable methods in comparative safety and effectiveness research. Pharmacoepidemiol Drug Saf. 2010;19:537–54.
23. Martin MHT, Nielsen MBD, Petersen SMA, Jakobsen LM, Rugulies R. Implementation of a coordinated and tailored return-to-work intervention for employees with mental health problems. J Occup Rehabil. 2012;22:427–36.
24. World Health Organization. International statistical classification of diseases and related health problems, 10th revision (ICD-10). Geneva: World Health Organization; 1992.
25. World Health Organization. International classification of functioning, disability and health (ICF). Geneva: World Health Organization; 2007.
26. Sekjær, K. Stadigt flere psykisk syge må vente på behandling [Increasing number of mentally ill must wait for treatment] [Danish]. Available from: http://www.information.dk/259442.
27. Pedersen J, Villadsen E, Burr H, Martin MHT, Nielsen MBD, Meinertz L. Register for sygedagpenge og sociale ydelser i Danmark [The Danish register of sickness absence compensation and social transfer payments] [Danish]. Copenhagen: The National Research Centre for the Working Environment; 2011.
28. Nielsen MBD, Madsen IEH, Bültmann U, Christensen U, Diderichsen F, Rugulies R. Predictors of return to work in employees sick-listed with mental health problems: findings from a longitudinal study. Eur J Public Health. 2011;21:806–11.
29. Sell L, Bültmann U, Rugulies R, Villadsen E, Faber A, Sogaard K. Predicting long-term sickness absence and early retirement pension from self-reported work ability. Int Arch Occ Env Health. 2009;82:1133–8.
30. Virtanen M, Kawachi I, Oksanen T, Salo P, Tuisku K, Pulkki-Raback L, et al. Socio-economic differences in long-term psychiatric work disability: prospective cohort study of onset, recovery and recurrence. Occup Environ Med. 2011;68:791–8.
31. Blank L, Peters J, Pickvance S, Wilford J, MacDonald E. A systematic review of the factors which predict return to work for people suffering episodes of poor mental health. J Occup Rehabil. 2008;18:27–34.

32. Rose D, Harrison E. The European socio-economic classification: a new social class schema for comparative European research. Eur Societies. 2007;9:459–90.
33. Ware JE Jr, Sherbourne CD. The MOS 36-item short-form health survey (SF-36). I. Conceptual framework and item selection. Med Care. 1992;30:473–83.
34. Bech P, Rasmussen NA, Olsen LR, Noerholm V, Abildgaard W. The sensitivity and specificity of the Major Depression Inventory, using the Present State Examination as the index of diagnostic validity. J Affect Dis. 2001;66:159–64.
35. Derogatis LR. SCL-90-R. Administration, scoring and procedures. MANUAL-II. Townson MD, 1983.
36. Durlak JA, DuPre EP. Implementation matters: a review of research on the influence of implementation on program outcomes and the factors affecting implementation. Am J Community Psychol. 2008;41:327–50.
37. Rebergen DS, Bruinvels DJ, Bos CM, van der Beek AJ, van Mechelen W. Return to work and occupational physicians' management of common mental health problems–process evaluation of a randomized controlled trial. Scand J Work Environ Health. 2010;36:488–98.
38. Aust B, Helverskov T, Nielsen MB, Bjorner JB, Rugulies R, Nielsen K, et al. The Danish national return-to-work program–aims, content, and design of the process and effect evaluation. Scand J Work Environ Health. 2012;38:120–33.
39. Loisel P, Durand P, Abenhaim L, Gosselin L, Simard R, Turcotte J, et al. Management of occupational back pain—the Sherbrooke model—results of a pilot and feasibility study. Occup Environ Med. 1994;51:597–602.
40. Punnett L, Wegman DH. Work-related musculoskeletal disorders: the epidemiologic evidence and the debate. J Electromyograph Kinesiol. 2004;14:13–23.
41. Romanov K, Appelberg K, Honkasalo ML, Koskenvuo M. Recent interpersonal conflict at work and psychiatric morbidity: a prospective study of 15,530 employees aged 24–64. J Psychosom Res. 1996;40:169–76.
42. Stansfeld S, Candy B. Psychosocial work environment and mental health: a meta-analytic review. Scand J Work Env Health. 2006;32:443–62.
43. Netterstrøm B, Conrad N, Bech P, Fink P, Olsen O, Rugulies R, et al. The relation between work-related psychosocial factors and the development of depression. Epidemiol Rev. 2008;30:118–32.
44. Hensing G, Wahlstrom R. Chapter 7. Sickness absence and psychiatric disorders. Scand J Public Health. 2004;32:152–80.
45. Schademan HK, Jensen S, Thuesen F, Holt H. Virksomhedernes sociale engagement [Corporate social responsibility] [Danish]. Copenhagen: SFI—The Danish National Centre for Social Research; 2008.
46. Høgelund J, Holm A, McIntosh J. Does graded return-to-work improve sick-listed workers' chance of returning to regular working hours? J Health Econ. 2010;29:158–69.

Barriers and facilitators for the implementation of a return-to-work intervention for sickness absence beneficiaries with mental health problems: Results from three Danish municipalities

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Abstract

Aims Evidence for the effectiveness of return-to-work (RTW) interventions aimed at sickness absence beneficiaries with mental health problems (MHPs) is still relatively sparse and mostly inconclusive. The lack of evidence may in part reflect the varying settings and inconsistent implementations associated with the interventions. The aim of this paper is to identify barriers and facilitators for the implementation of a coordinated and tailored RTW-intervention implemented at three different sites.

Methods We used qualitative and quantitative data to assess the implementation according to process evaluation guidelines. Data sources were individual and group interviews, observations, national registers, and documents used in the intervention.

Results The quality of the implementation varied greatly across the three settings. Barriers included lack of skills to recruit according to the inclusion criteria, different interpretations of sickness absence legislation among stakeholders, competing rehabilitation alternatives, and lack of managerial support for the intervention. An important facilitator was the motivation and availability of resources to solve disagreements through extensive communication.

Conclusion The different settings presented various barriers and facilitators, which resulted in different versions of the intervention. A higher degree of user involvement in the design and development phase is likely to improve the implementation quality of future interventions.

Keywords

Return-to-work, mental health problems, intervention, implementation

Conflict of interest

The authors declare no conflict of interest.

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Introduction

Mental health problems (MHPs), such as depressive, anxiety and stress-related disorders, have emerged as a major public health problem in many countries in the past decade. MHPs are associated not only with impairment of psychological and social functioning, but also with impaired occupational functioning [1-3]. This has considerable personal and societal implications, not least because MHPs predict all-cause sickness absence [4;5] and the risk of disability pensioning [6;7].

Research on return-to-work (RTW) interventions aimed at sickness absence beneficiaries with MHPs is still relatively sparse, and results on the effectiveness of such interventions are inconclusive or, at best, only moderately positive with regards to reductions in sickness absence length and/or symptoms [8-12]. A Cochrane-review from 2008 of 11 intervention studies aimed at reducing sickness absence among employees with depression concludes that none of the used methods (medication alone, psychological treatment alone or in combination with medication) have documented effectiveness [13]. A more recent review of interventions aimed at facilitating RTW among adults with adjustment disorders investigated evidence of the effectiveness of psychological and pharmacological treatments, and relaxation, exercise and employee assistance programmes, but found no convincing support for any of them [14].

The lack of evidence of effectiveness may in part reflect the varying settings and inconsistent implementations associated with the interventions. Inattention to the effects of differences in implementation and insufficient recognition of contextual differences arising from the varying environments for the implementation, are common obstacles for the achievement of intended effects [15]. It cannot be assumed that an intervention, which has demonstrated a positive effect in one study will be a success when implemented elsewhere [16]. This is because implementation is the process of converting knowledge into practice. Such a process requires the translation of knowledge, which is challenging, as the translation often involves changes in knowledge, attitude and behaviour in individuals as well as organisations [17]. Thus, the process of implementing an intervention can have as big an impact on the outcome as the content of the intervention. This points to a need for systematic process evaluations that help to understand what has happened in the intervention and how barriers of implementation can be overcome. However, systematic process evaluations of RTW-interventions are still few and far between.

In two previous publications we presented process- and effect results from the single site implementation of a coordinated and tailored work rehabilitation (CTWR) intervention aimed at sickness absence beneficiaries with MHPs [18;19]. In the present study we expand the knowledge of barriers and facilitators for the implementation of this intervention utilising process data from a further three sites.

Methods

The CTWR-intervention

The intervention was organised as a collaboration between three Danish municipalities and a private company specialising in a multidisciplinary, coordinated and tailored RTW-approach, based on elements from the Sherbrooke-model [20], and the Stages-of-Change-model [21]. In Denmark, social insurance officers (SIOs) in municipal job centres are responsibility for assessment and management of sickness absence beneficiaries and for the initiation of efforts to promote RTW. They also have the authority to terminate benefits if they assess a beneficiary as no longer eligible for them. In the present study, SIOs recruited participants, while the private company offered the following efforts: 1) work disability screenings (WDS) conducted by a multidisciplinary team to assess disability and functioning and barriers and resources for RTW; 2) formulation of RTW-plans; 3) implementation of RTW-plans, with regular updates according to participants' current situation. The intervention lasted 12 weeks for each participant.

The aim of the intervention was to facilitate an early RTW and reduce sickness absence and symptoms of MHPs. The multidisciplinary team set up the following criteria for inclusion: Employees aged between 20 and 60 years, on sickness absence of 4-12 weeks' duration due to common mental health problems, such as depression, anxiety, or stress-related conditions. The recruitment target was 275 participants over a three-year period. For further details of the intervention and the Danish sickness absence system, see [18;19].

Data sources

Our analyses are based on qualitative and quantitative data collected between August 2008 and January 2011. We used individual and group interviews, observations, national registers, and documents from the intervention.

Interviews. We carried out two group interviews with the multidisciplinary team and the intervention's management, each lasting approximately 90 minutes. The first interview took place in February 2009, the second in January 2011. We also carried out two group interviews with SIOs, one in November 2009 and one in January 2011, each lasting approximately 90 minutes. We sent

out invitations to participate in an interview to 34 randomly selected participants, who had completed the intervention. Ten participants (five from the largest, three from the second largest, and two from the smallest municipality) accepted the invitation and were interviewed in their own home. Each interview lasted between 45 and 90 minutes. The purpose of all interviews was to document the interviewees' experiences with and thoughts on the intervention's implementation. All interviews were semi-structured, recorded and transcribed verbatim.

Observations and documents. We observed the multidisciplinary team at work on four occasions (April, May, September, and November 2010) during their weekly conferences, where participants' status and progress were discussed. Each session lasted between one and two hours. We collected 39 RTW-plans and analysed them to document the multidisciplinary team's planned steps towards RTW. Furthermore, we used the intervention protocol developed by the multidisciplinary team as a guideline for the intended implementation.

Register data. All participants were followed in the DREAM-register, which contains demographic information on all recipients of sickness absence benefits in Denmark [22]. The register information allowed us to assess the degree to which participants were recruited in accordance with the inclusion criteria set by the multidisciplinary team.

Data analyses

All interviews were audio-taped, transcribed verbatim and coded thematically with the software NVivo, version 8 [23-25]. Each multidisciplinary team conference was observed by two researchers who took notes according to an observation template developed for the study, and subsequently compared, discussed, and aligned them. The following results are structured around the guidelines for process evaluations presented by Saunders et al. [26], which specify analysis of the recruitment, reach, fidelity, dose delivered, dose received, and context of the intervention.

Ethical approval

The study was reported to and approved by the Danish Data Protection Agency (jnl.nr. 2008-54-0438). Approval by the Danish National Committee on Biomedical Research Ethics was not required for studies of this nature [30].

Results

Recruitment and reach

During the evaluation period (August 2008 – December 2010) we registered a total of 262 recruited sickness absence beneficiaries (172 from municipality A, 47 from municipality B, and 43 from municipality C). As illustrated in figure 1, municipality A recruited the most participants and municipality C the least, relative to their share of beneficiaries. According to our records, 210 of the recruited beneficiaries actually participated in the intervention, nine returned to work before the start of the intervention, and seven were rejected by the multidisciplinary team as their problems were deemed too severe for them to be able to benefit from the intervention. We know that a further 11 of the recruited beneficiaries did not wish to participate, but we were not able to ascertain the drop-out reasons for the remaining 25.

We based our analyses on the 255 participants accepted by the multidisciplinary team, as these represent the intended target group for the intervention. Of the 255 participants, we were able to identify and follow 213 in the DREAM-register. The remaining 42 were excluded due to inconsistencies in the data (e.g., not registered as a beneficiary, non-matching dates of absence).

--- Figure 1 about here ---

Adherence to inclusion criteria. Table 1 shows the characteristics of the recruited participants. All the interviewed SIOs expressed awareness of the inclusion criteria. Our analyses indicate, however, that the criteria of a maximum of 12 weeks sickness absence was not consistently adhered to, as 25% of participants were recruited after more than 12 weeks. Furthermore, we found an average waiting time between recruitment and WDS of 2 weeks (not shown in table).
The criteria of employment also proved problematic. Shortly after the initiation of the project, the multidisciplinary team and the SIOs agreed that sickness absence beneficiaries without a job should be eligible, as these represented a particular challenge to the SIOs. Our data show that 20% of participants were unemployed at the time of recruitment.

Finally, we identified differences in the way in which the three municipalities defined the criteria of common MHPs. While municipality B and C only recruited participants that the SIOs themselves evaluated to suffer from a "mild degree" of MHPs, municipality A did not consider the severity of the MHPs when recruiting. Consequently, some participants were rejected by the multidisciplinary team due to the severity of their disorder, and many of the accepted participants required more psychological support than initially anticipated. The SIOs did not use any clinical tools or expertise in their assessment, which were thus made on a layman basis, unless the participant's general practitioner had already provided a diagnosis.

Emergent inclusion criteria. Apart from the formal inclusion criteria set by the multidisciplinary team, our interviews showed that the SIOs used parameters, such as the participants' perceived need for help and their motivation for RTW in the assessment of eligibility. For example, sickness absence beneficiaries who were already receiving treatment from a psychologist or psychiatrist and/or appeared to have a clear plan for RTW were not considered in need of the intervention. Although motivation for participation was not a formal inclusion criterion, both the multidisciplinary team and the SIOs considered this an important prerequisite. There were, however, municipal differences in the way in which the intervention was presented and participation encouraged. In municipality A, the SIOs considered participation mandatory, whereas SIOs in municipality B and C left beneficiaries free to decline the offer without it having any negative consequences for their beneficiary status. Our interviews with SIOs and participants from municipality B and C indicate that the travelling distance to and from the rehabilitative activities was a significant problem deterring many from accepting participation.

--- Table 1 about here ---

Fidelity towards the intervention model

The main working mechanisms of the intervention were 1) early identification of participants; 2) multi-disciplinary assessment; and 3) coordination of stakeholders. The following sections describe the extent to which this intervention-model was adhered to. "Early identification of participants", however, is described in the section on 'Recruitment and Reach'.

Multidisciplinary assessment. As intended, the WDS was performed by a multidisciplinary team consisting of a social worker (who was also a psychotherapist), a psychologist, a physiotherapist, and an occupational physician. During the evaluation period, a psychiatrist was added to the team. Each team member assessed the participant individually, and the individual assessments were discussed at a multidisciplinary conference, where the entire team would agree on the individual RTW-plan. Our observations of the team at work showed that they were successful in creating a forum for multidisciplinary cooperation, characterised by professional respect. It also appeared from our observations that diverse considerations, such as 'self-efficacy', 'spousal support', 'diet change' and 'relation to supervisor at work', allowed for a holistic approach to the participants' problems. During the evaluation period, however, the multidisciplinary approach was challenged by the reluctance of the SIOs to recruit participants to the full 12-week intervention. Particularly municipality B and C began to request the team's expertise only for individual tasks, such as workplace- or psychiatric assessments (see also section on 'coordination with SIOs').

Coordination of stakeholders. The participants' general practitioners (GP) were always contacted and informed of the RTW-plan, and in some cases, the GP participated in meetings with the multidisciplinary team to discuss and coordinate efforts. If an external psychologist/therapist was involved, the result was usually a division of labour, with the multidisciplinary team's psychologist addressing work-related issues and the external therapist addressing private issues. During the evaluation period, legislative changes made the SIOs responsible for the initial contact to the participants' workplace to discuss the options for RTW.

Coordination between the multidisciplinary team and employers thus became an extension of the established agreements and typically involved participation in meetings with the employer and assistance in negotiating working conditions or, when relevant, terms of termination. For unemployed participants, internships were an option often discussed and utilized, particularly in municipality A, which employed consultants for that specific purpose. The consultants then worked in cooperation with the multidisciplinary team to get the participant placed with a temporary employer. Municipality B and C used external consultants, who worked independently of the multidisciplinary team; a situation which often meant prolonged delays between WDS and work placement.

Coordination between the multidisciplinary team and the SIOs was essential to ensure recruitment of eligible participants, and to ensure that the SIOs received the information necessary for the statutory reassessments. Communication took place through 1) regular meetings between the multidisciplinary team, their management, and SIOs; 2) an on-line database for sharing of the case documents created by the team (RTW-plans, monthly status briefs, and final reports); and 3) ad hoc contact.

Dose delivered and received

The SIOs in all three municipalities were initially positive towards the intervention. However, during the evaluation period, particularly SIOs in municipality B and C became dissatisfied with the multidisciplinary team's efforts. We identified three main sources of dissatisfaction: Firstly, the documentation received from the multidisciplinary team regarding participants' status and progress was too unspecific to be useful in the statutory reassessments and often delivered with considerable delay. This changed later in the study, when the RTW-plans became more structured and an online database was established, allowing the SIOs direct access to the documents as soon as they were created. Secondly, the SIOs in municipality B and C found that the multidisciplinary team lacked understanding of the sickness absence legislation. As a result, the multidisciplinary team would question, and in some cases oppose, decisions made by the SIOs, for example regarding a participant's continued eligibility for sickness absence benefits. Thirdly, the SIOs found that the multidisciplinary team's timeframe for RTW was generally too long, and that the focus was on complete recovery rather than RTW.

In municipality A, increased communication between the SIOs and the multidisciplinary team led to solutions to the issues causing dissatisfaction. The SIOs in municipality B and C, on the other hand, did not feel that their complaints were heard. Consequently, they more or less stopped recruiting participants to the intervention and used the multidisciplinary team only for isolated tasks, such as workplace- or psychiatric assessments. A further disruption to the cooperation with municipality B and C was caused by the multidisciplinary team moving premises to a more remote location. The considerable travelling requirements (an average of 38,6 kilometres and 72 minutes of public transport each way) deterred many eligible beneficiaries from participation.

Most of the participants interviewed were happy with the help and support they received from the intervention and described the multidisciplinary team as competent and professional. Consultations with the psychologist and assistance in communications with the workplace were deemed particularly helpful elements. The remote location of the multidisciplinary team, however, was perceived as problematic. Several interviewees reported being advised to RTW with less hours than they had intended themselves or being encouraged to find another workplace.

Context

Interviews with the SIOs indicated municipal differences in the managerial support of and involvement with the intervention. In municipality A, who bought the largest share of places in the intervention, the jobcentre's management urged the SIOs to make the most of the offer, and invest the resources necessary to overcome the initial disagreements. In municipality B and C, on the other and, the management left it up to the SIOs to decide on the utility of the intervention, thus allowing them to cease recruitment if they did not get satisfactory results. Additionally, the SIOs in municipality A stated that they did not have good alternatives to the expertise offered by the multidisciplinary team. On the contrary, the SIOs in municipality B and C indicated that other and better alternatives were available to them.

Barriers and facilitators for implementation

Table 2 summarises the barriers and facilitators for the intervention's implementation across the three settings.

--- Table 2 about here ---

Discussion

Our analysis of the implementation of the CTWR-intervention in three Danish municipalities showed that the three settings posed different barriers and facilitators for the implementation as intended. As a result, different versions of the intervention with very different outcomes in terms of stakeholder satisfaction emerged. In Municipality A, the intervention was implemented largely as intended and to the SIOs satisfaction. Some participants experienced waiting time between recruitment and WDS, and the documentation produced by the multidisciplinary team was initially not suited to the SIOs needs. But the determination of both the SIOs and the multidisciplinary team to overcome the barriers through extensive communication made successful implementation possible. In contrast, the implementation in Municipality B and C encountered significant barriers, leading to dissatisfaction and ultimately resulting in abandonment of the intervention-model. The most significant barriers appeared to be different interpretations of the sickness absence legislation, divergent perceptions of the time needed for RTW, lack of managerial support for the intervention, and alternative options available for eligible beneficiaries.

When studying differences in intervention implementation, the diffusion of innovation theory developed by Rogers can be a useful framework for understanding the processes involved [27]. Rogers proposes a list of characteristics that determine the chance of innovations becoming successfully implemented in new settings: 1) relative advantage over alternative options; 2) compatibility with the values and needs of users; 3) an acceptable level of complexity, allowing them to be used without the need to acquire new skills. Applied to the present study, it appears that the CTWR-intervention as it was presented to SIOs in municipality B and C fell short on all three characteristics. The SIOs had better alternatives available; the number of eligible participants was not large enough to warrant the investment of time and resources to overcome the perceived barriers; SIOs did not want to persuade or push eligible beneficiaries into participating if they expressed concerns about it; and consistent adherence to the inclusion criteria would have required training in the assessment of MHPs. As a result, the intervention was adapted, or what Rogers calls *re-invented*, into something which was very different from what was originally intended.

The CTWR-model is based on the premise that cooperation between stakeholders – in this case, the multidisciplinary team, SIOs, employers, healthcare providers, and sickness absence beneficiaries - is a pivotal element in the rehabilitation process. Stakeholders in the RTW-process often have diverging paradigms and different views on what constitute desired outcomes and the necessary steps towards them [28]. Taken together with the results from the single site implementation, which identified many of the same barriers for successful implementation as the present study [18], the CTWR- intervention would have benefitted from a higher degree of stakeholder-involvement in its design.

Conclusion

The quality of the implementation of the CTWR-intervention, which was delivered by the same multidisciplinary team, varied greatly across the three settings investigated. The success of the implementation depended on factors, such as the users' perceived need for the intervention, their experiences with the intervention, the physical location of the intervention activities, and managerial support for the intervention. Our findings point to the need for a high degree of stakeholder involvement in the design of RTW-interventions.

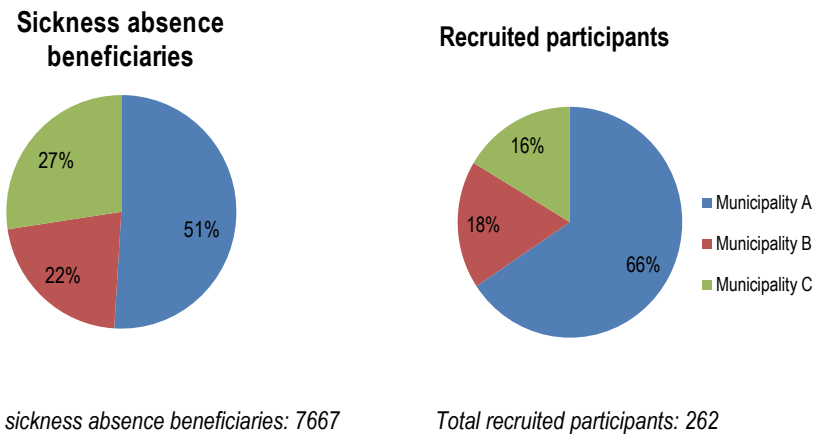

Figure 1: Percentage of total beneficiaries and percentage of total recruited participants in the municipalities

Table 1: Participant characteristics at recruitment

Register data	**Accepted participants** (N=213)
Gender, % (n)	
Women	67 (142)
Men	33 (71)
Age, mean (SD)	43 (9.8)
Weeks spent on sickness absence, median (IQR)	8 (5)
Employed , % (n)	
Yes	80 (170)
No	20 (43)

Table 2: Barriers and facilitators for implementation

	Barriers	Facilitators
Recruitment and reach	Lack of skills and resources to assess mental health problems Negative experiences with the intervention Waiting time between recruitment and WDS Competing alternatives available	Positive expectations to the intervention Managerial encouragement Participation considered mandatory
Multidisciplinary rehabilitation activities	Participants were more severely ill than anticipated and required more extensive psychological help Inclusion of unemployed; involvement of independent consultants SIOs request for isolated assessments	Inclusion of additional expertise (psychiatrist) in multidisciplinary team Respect for different perspectives among the team members Training in multidisciplinary cooperation
Coordination of stakeholders	Legislative changes placing responsibility for workplace contact with SIOs	Participation in structured meetings (General practitioners, employers) Consistent sharing of documents
Cooperation with SIOs	Unspecific and unstructured documents Different interpretations of the sickness absence legislation	Structured documents that were aligned with the SIOs needs Motivation and available resources to solve emergent issues; extensive communication
Participant satisfaction	Considerable travelling distance to intervention activities	Availability of psychological support Support in contact with employer
Context	Lack of managerial support for intervention	Managerial involvement in implementation

Reference List

1 Buist-Bouwman MA, De GR, Vollebergh WA, Alonso J, Bruffaerts R, Ormel J. Functional disability of mental disorders and comparison with physical disorders: a study among the general population of six European countries. Acta Psychiatr Scand 2006;113:492-500.

2 Sanderson K, Tilse E, Nicholson J, Oldenburg B, Graves N. Which presenteeism measures are more sensitive to depression and anxiety? J Affect Dis 2007;101:65-74.

3 Lim D, Sanderson K, Andrews G. Lost productivity among full-time workers with mental disorders. J Mental Health Pol Econ 2000;3:139-146.

4 Broadhead WE, Blazer DG, George LK, Chiu KT. Depression, Disability Days, and Days Lost from Work in A Prospective Epidemiologic Survey. JAMA 1990;264:2524-2528.

5 Savikko A, Alexanderson K, Hensing G. Do mental health problems increase sickness absence due to other diseases? Soc Psychiatry Psychiatr Epidemiol 2001;36:310-316.

6 Stansfeld S, Fuhrer R, Head J. Impact of common mental disorders on sickness absence in an occupational cohort study. Occupational and Environmental Medicine 2010;Online First.

7 Bültmann U, Christensen KB, Burr H, Lund T, Rugulies R. Severe depressive symptoms as predictor of disability pension: a 10-year follow-up study in Denmark. Eur J Public Health 2008;18:232-234.

8 van der Klink JJL, Blonk RWB, Schene AH, van Dijk FJH. Reducing long term sickness absence by an activating intervention in adjustment disorders: a cluster randomised controlled design. Occup Environ Med 2003;60:429-437.

9 Brouwers EPM, Tiemens BG, Terluin B, Verhaak PFM. Effectiveness of an intervention to reduce sickness absence in patients with emotional distress or minor mental disorders: a randomized controlled effectiveness trial. Gen Hosp Psychiatry 2006;28:223-229.

10 Bakker IM, Terluin B, van Marwijk HWJ, van der Windt DAWM, Rijmen F, van Mechelen W et al. A cluster-randomised trial evaluating an intervention for patients with stress-related mental disorders and sick leave in primary care. PLoS Clin Trials 2007;2.

11 Schene AH, Koeter MWJ, Kikkert MJ, Swinkels JA, McCrone P. Adjuvant occupational therapy for work-related major depression works: randomized trial including economic evaluation. Psychol Med 2007;37:351-362.

12 Rebergen DS, Bruinvels DJ, Bezemer PD, van der Beek AJ, van Mechelen W. Guideline-based care of common mental disorders by occupational physicians (CO-OP study): a randomized controlled trial. J Occup Env Med 2009;51:305-312.

13 Nieuwenhuijsen K, Bültmann U, Neumeyer-Gromen A, Verhoeven AC, Verbeek JH, van der Feltz-Cornelis CM. Interventions to improve occupational health in depressed people. Cochr Database System Rev 2008;CD006237.

14 Arends I, Bruinvels DJ, Rebergen DS, Nieuwenhuijsen K, Madan I, Neumeyer-Gromen A et al. Interventions to facilitate return to work in adults with adjustment disorders. Cochrane Database Syst Rev 2012;12:CD006389.

15 Nytrø K, Saksvik PO, Mikkelsen A, Bohle P, Quinlan M. An appraisal of key factors in the implementation of occupational stress interventions. Work & Stress 2000;14:213-225.

16 Davis D, Evans M, Jadad A, Perrier L, Rath D, Ryan D et al. The case for knowledge translation: shortening the journey from evidence to effect. BMJ 2003;327:33-35.

17 McCluskey A, Vratsistas-Curto A, Schurr K. Barriers and enablers to implementing multiple stroke guideline recommendations: a qualitative study. BMC Health Serv Res 2013;13:323.

18 Martin MHT, Nielsen MBD, Petersen SMA, Jakobsen LM, Rugulies R. Implementation of a coordinated and tailored return-to-work intervention for employees with mental health problems. J Occup Rehabil 2012;22:427-436.

19 Martin MH, Nielsen MB, Madsen IE, Petersen SM, Lange T, Rugulies R. Effectiveness of a Coordinated and Tailored Return-to-Work Intervention for Sickness Absence Beneficiaries with Mental Health Problems. J Occup Rehabil 2013;23:621-630.

20 Loisel P, Durand P, Abenhaim L, Gosselin L, Simard R, Turcotte J et al. Management of occupational back pain - the Sherbrooke model - results of a pilot and feasibility study. Occup Environ Med 1994;51:597-602.

21 Prochaska JO, Diclemente CC. Stages of change in the modification of problem behaviors. Prog Behav Modif 1992;28:183-218.

22 Hjollund NH, Larsen FB, Andersen JH. Register-based follow-up of social benefits and other transfer payments: Accuracy and degree of completeness in a Danish interdepartmental administrative database compared with a population-based survey. Scand J Public Health 2007;35:497-502.

23 NVivo8. QSR International Ltd., 2008.

24 Alvesson M, Skölberg K. *Reflexive methodology. New vistas for qualitative research.* London: Sage, 2000.

25 Lawrence Neuman.W. *Social research methods. Quantitative and qualitative approaches.* 5 ed. Boston: Allyn and Bacon, 2003.

26 Saunders RP, Evans MH, Joshi P. Developing a process-evaluation plan for assessing health promotion program implementation: a how-to guide. Health Prom Pract 2005;6:134-147.

27 Rogers EM. *Diffusion of innovations.* 5th ed. New York: Free Press, 2003.

28 Franche RL, Baril R, Shaw W, Nicholas M, Loisel P. Workplace-based return-to-work interventions: optimizing the role of stakeholders in implementation and research. J Occup Rehabil 2005;15:525-542.

Stability of return to work after a coordinated and tailored intervention for sickness absence beneficiaries with mental health problems: results of a two-year follow-up study.

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Abstract

Purpose Mental health problems (MHPs) are increasingly common as reasons for long term sickness absence. Evidence of how to promote a stable return to work (RTW) after sickness absence due to MHPs is, however, limited. The purpose of this study was to assess the effects of a multidisciplinary, coordinated and tailored RTW-intervention in terms of stability of RTW, cumulative sickness absence and labour market status after two years among sickness absence beneficiaries with MHPs.

Methods In a quasi-randomised, controlled trial, we followed recipients of the intervention (n=88) and of conventional case management (n=80) for two years to compare their risk of recurrent sickness absence and unemployment after RTW, their cumulative sickness absence and their labour market status after two years.

Results We found no statistically significant intervention effect in terms of the risk of recurrent sickness absence or unemployment. Intervention recipients had more cumulated sickness absence in year one (mean difference=58 days; p=0.00) and year two (mean difference=36 days; p=0.03), and fewer were self-supported at the end of follow-up (52% vs 69%; p=0.02).

Conclusion The intervention showed no benefits in terms of improved stability of RTW, reduced sickness absence or improved labour market status after two years when compared to conventional case management.

Keywords

:Return-to-work, mental health problems, intervention, recurrent sickness absence.

Introduction

Long term sickness absence, a precursor of early and permanent exclusion from the labour market, is a major concern in most developed countries, associated with substantial social and financial costs for the individual as well as for society [1-3]. For many years, musculoskeletal problems have been the primary diagnosis behind long term sickness absence and disability pensioning. In recent years, however, mental health problems (MHPs) have become increasingly common in the statistics, accounting for more than a third of all new benefit claims across OECD countries, and for more than 50% of new claims in Denmark [3, 4].

Return to work (RTW) after long term sickness absence can be conceptualised as a process with four different stages: off work, re-entry, maintenance and advancement [5]. The maintenance period may be particularly important to consider when designing and evaluating RTW-interventions aimed at people sick-listed due to MHPs, as these conditions generally have a high recurrence rate [6, 7]. Furthermore, since previous episodes of long term sickness absence is a strong risk factor for subsequent ones [8, 9], and the risk of permanent exclusion from the labour market increases with the number of sickness absence episodes [10, 11], it can be argued that the most crucial task of a RTW intervention is to ensure a stable RTW. A delay in the time to first RTW may thus be outweighed by less recurrent sickness absence.

However, to the best of our knowledge, very few intervention studies aiming to promote RTW among people suffering from poor mental health have gone beyond time to first RTW to assess the stability of RTW in terms of recurrent sickness absence or subsequent unemployment [12-14]. Of the few available examples, only van der Klink et al. [13], who evaluated the effect of a graded activity approach, involving stress management training and contact with the work place, found superiority of the intervention in reducing the incidence of recurrent sickness absence among participants with adjustment disorders.

The presently available evidence for intervention effectiveness in terms of promoting a stable RTW after sickness absence due to MHPs is thus limited. Consensus is emerging, though, that a multidisciplinary, coordinated approach involving both the worker and his/her environment holds

the greatest potential for addressing the multicausality of work disability and optimizing RTW-outcomes [15-17].

In a previous assessment of the short term effects of a multidisciplinary, coordinated and tailored return-to-work intervention implemented in a Danish municipality, we found that the effect on RTW within one year after first day of sickness absence was no better than conventional case management [18]. On the contrary, the intervention appeared to slow down the RTW-rate among recipients. It is possible, however, that the focus on first RTW as outcome masked a longer term positive effect of the intervention. More specifically, the intervention's educational content may have enabled participants to cope better in the workplace after RTW, thus preventing recurrent sickness absence or subsequent unemployment.

The aim of the present study is to assess the effect of the intervention on the stability of RTW in terms of cumulative sickness absence, labour market status after two years and risk of recurrent sickness absence or unemployment after initial RTW. We hypothesised that recipients of the intervention would show a more favourable pattern compared to recipients of conventional case management, that is that intervention recipients would a) have fewer sickness absence days during the second year of follow-up, b) be more likely to be at work after 2 years follow-up and c) be less likely to have recurrent sickness absence or become unemployed after initial successful RTW.

Methods

Setting

The Danish sickness benefit legislation covers all residents for a maximum of 52 weeks within a period of 18 months, and no distinction is made between work-related and non-work related sickness absence. Employers pay full wages for the first 31 days of absence (during the time of the study: the first 21 days), after which they can claim compensation for part of the wage from the municipality. A sick-listed employee can be laid off if general staff cutbacks are made or if the absence exceeds 120 days. Social insurance officers (SIOs) in municipal jobcentres are responsible for assessing all new beneficiaries, outline their RTW-prospects and make regular follow-up assessments throughout the sickness absence period.

There is currently no standardised assessment or treatment procedure for people sick listed due to MHPs. The intervention in this study was implemented as collaboration between a municipal jobcentre and a private vocational rehabilitation company. The evaluation was carried out by researchers from the National Research Centre for the Working Environment (NRCWE), who were not involved in the intervention's design or implementation. A detailed description of the implementation process has been published elsewhere [19].

Recruitment procedure

Participants were recruited by SIOs in the municipal job centre consecutively between May 2008 and January 2009 according to the following inclusion criteria: Employees aged 20-60, sick-listed for 4-12 weeks due to a common MHP (ICD-10: F30-48, or a related condition not specified in ICD-10, e.g. burnout)[20], and no co-morbid psychotic conditions. The criteria were determined by the rehabilitation company in advance of the study. During the study period, the criteria were expanded to include participants who had recently lost their job. As an RCT was deemed unfeasible for integration in the jobcentre's daily practice, the SIOs were instructed to allocate participants to the intervention group on Mondays and Tuesdays and to the reference group on Wednesdays and Thursdays. Consequently, on Mondays and Tuesdays, the SIOs informed eligible beneficiaries of the intervention and invited them to participate. If consent was given, the SIOs referred participants to the private company immediately through an electronic system. The private company then

contacted the participant to arrange a date for the initial interview. Participants in both groups received a questionnaire for the assessment of socio-demographic and health-related variables at, or shortly after, recruitment.

Intervention

The intervention followed the model of coordinated and tailored work rehabilitation (CTWR), which has previously shown effectiveness in terms of reduced sickness absence and fewer negative health symptoms among sickness absence beneficiaries with musculoskeletal disorders [21]. The intervention included 1) a work disability screening by a multi-disciplinary rehabilitation team to assess functioning, barriers and resources in relation to RTW in accordance with the International Classification of Functioning, Disability and Health [20]; 2) the formulation of a multi-disciplinary plan for RTW, including proposed activities to overcome barriers and strengthen resources (e.g. stress management training and contact with the workplace), and 3) implementation of the action plan, which was regularly adjusted according to the individual's current situation over a period of 12 weeks. Participants who returned to work before the end of 12 weeks were able to contact the multidisciplinary team as needed in the remaining period.

Conventional case management

Participants in the reference group received conventional case management (CCM), which consists of assessment and monitoring by the municipal SIOs. The SIOs can initiate efforts to improve or retain the recipient's labour market attachment, such as granting supplementary benefits while the beneficiary resumes work on reduced hours, or enters wage subsidised job-training or further education. Additionally, all Danish residents have free and unlimited access to a general practitioner (GP). While treatment by private psychotherapists is subject to patient charges, psychiatric treatment in hospitals is free upon referral from a GP. However lengthy waiting lists for psychiatric treatment are common [22].

Analyses

We followed all participants in the Danish register of sickness absence compensation and social transfer payments (RSS) [23] for two years after the first day of sickness absence (index day). RTW was defined as being self-supported, i.e. not receiving any transfer payment. Baseline

characteristics were compared with the Mann-Whitney U test and the Chi-squared test of comparable distributions.

The outcomes of interest were 1) the number of days spent on sickness absence in year one and two after the index day, 2) participants' labour market status at the end of year two (at the 730th day), and 3) the risk of recurrent sickness absence (>3 weeks) or unemployment during the first year after RTW. The first two outcomes were assessed with the Mann-Whitney U-test and logistic regression models (binary). We considered recurrent sickness absence and unemployment competing risks and followed the guidelines of Varadhan et al [24] in our analysis. First, we compared event-free survival time (time back at work without experiencing either event) in the two groups with a cox proportional hazards model. We then assessed the cause-specific hazard (i.e. the risk of either outcome separately) based on treatment, also with a cox proportional hazards model.

We performed all analyses both with and without adjustment for confounders. As confounders, we included variables assumed to influence the stability of RTW, such as age, gender, previous sickness absence, previous unemployment, occupational group, self-rated general health, self-rated work-ability, and symptoms of poor mental health [9, 10, 25]. Information on age, gender, previous sickness absence and unemployment was obtained from the RSS, while information on occupational group, health and work ability was obtained from the baseline questionnaire. We categorised occupational group according to the European Socio-economic Classification (ESeC) [26]. General health was measured with an item from the MOS short-form health survey (SF-36)[27]. Work ability was measured on a scale from 0-10, with 0 indicating the lowest possible work ability and 10 the highest. Depressive symptoms were measured with the Major Depression Inventory (MDI [28]), and anxiety and somatisation were measured with subscales of the Symptom Checklist 90, revised version (SCL-90-R [29]). All statistical analyses were performed using SPSS, version 20.0 (IBM Corp. 2011, USA). Statistical significance was defined by a p-value of <0.05.

Ethical approval

The study was reported to and approved by the Danish Data Protection Agency (jnl.nr. 2008-54-0438). Approval by the Danish National Committee on Biomedical Research Ethics was not required for studies of this nature [30].

Results

Participant characteristics

We included 168 participants in the study; 88 in the CTWR-group and 80 in the CCM group. Of the included participants, 68% completed the baseline questionnaire. A more detailed description of the recruitment flow can be found in the previous publication on the intervention's short term effects [18].

Table 1 presents the available baseline characteristics of participants. There were no statistically significant group differences in terms of socio-demographic characteristics, previous sickness absence or unemployment. However, participants in the CTWR-group reported significantly higher somatisation symptoms and lower work ability.

--- table 1 about here-----

Cumulative sickness absence

When assessed with a Mann-Whitney U test, participants in the CTWR-group spent statistically significantly more days on sickness absence than participants in the CCM-group in both year one (mean=250 days; SD=107 days vs mean=192 days; SD=105 days; $p<0.01$ and year two (mean=70 days; SD=122 days vs mean=34 days; SD=88 days; $p=0.03$).

Labour market status after 2 years

Table 2 a and b show the current labour market status of participants at the end of follow-up (104 weeks days after index day). When adjusting for gender, age, sickness absence at recruitment, and previous sickness absence and unemployment, less participants were self-supported in the CTWR-group (52%) than in the CCM-group (69%)($p=0.02$). This difference persisted when performing the analysis in the subsample of participants who responded to the questionnaire, and further adjusting for the variables occupational group, general health perception, self-rated work ability, and symptoms of anxiety, somatisation and depression (53% vs 70%; $p=0.02$).

-- table 2 about here

Risk of recurrent sickness absence or unemployment

During the two year follow-up, 50 participants in the CTWR-group and 55 participants in the CCM-group returned back to work. Of those, 16 (32%) in the CTWR-group and 13 (24%) in the CCM-group experienced subsequent recurrent sickness absence or unemployment. The difference between the two groups was not statistically significant (HR=1.47, 95% CI=0.71-3.06, Table 3). In further analyses we examined rates for recurrent sickness absence and unemployment separately and adjusted for covariates. These analyses showed similar patterns: Participants in the CTWR-group had a tendency towards an increased risk of both outcomes, but none of the differences were statistically significant (Table 3).

--- table 3 about here ---

--- figure 1 about here---

Discussion

The purpose of this article was to assess the stability of RTW within the first year among previous sickness absence beneficiaries who received the CTWR-intervention, as compared to those who received CCM. We ascertained the participants' labour market status and accumulated sickness absence one and two years after the index day. Here we found a significantly smaller proportion of self-supported participants in the CTWR-group than in the CCM-group, as well as significantly more days spent on sickness absence both one and two years after the index day.

We also assessed the intervention's effect on the risk of recurrent sickness absence and unemployment. Since both recurrent sickness absence and unemployment represent interruptions of RTW, we first analysed the risk of both outcomes together. In this analysis we found no statistically significant group differences. We proceeded to assess the risk of recurrent sickness absence and unemployment separately, and although the hazard ratios pointed towards a higher risk of both outcomes in the CTWR-group, they were not statistically significant.

The CTWR-intervention included a thorough assessment of the participants' situation, both in terms of health, work and private life. For many participants, the assessment was followed up with psycho-education about their mental health problem, as well as advice about how to manage the RTW-process. The present findings, however, lend no support to the hypothesis that the intervention's educational content enabled participants to maintain a more stable RTW, than had they received conventional, municipal case management. To the contrary: intervention recipients had more sickness absence days in the second year of follow-up, they were less likely to be self-supported two years after entering the study and they showed a non-significant tendency towards recurrent sickness absence and unemployment.

A potential explanation for the lack of superiority of the intervention in preventing unemployment could be that recipients of the intervention, on average, took longer time to RTW, thus reducing the available time left as eligible for sickness absence benefits (52 weeks within a period of 18 months). If this group of participants experienced difficulty coping with their RTW, they may not have been eligible for sickness absence benefits because of the time restriction, and the only option left for

them would be to resign from their job. Post hoc analyses of the data show that 58% of the intervention recipients who became unemployed within one year after TTA did so after less than 13 weeks, which is the period of employment required for regaining eligibility for sickness absence benefits. However, only one of these participants had accumulated more than 52 weeks of sickness absence, so this explanation does not seem to fit our data.

Another potential explanation for the lack of positive long term effects might be found in the intervention's content. It is possible, that the opportunity for recipients to reflect on their work situation in light of their health status, with the help of professionals (psychologist, occupational physician, social worker), made some of them more prone to attempt a job change rather than staying in a job they found stressful. Changing jobs may be health promoting for people who are not happy with their present job or suffer from job related health problems [31, 31, 32]. Hence, a short period of unemployment is, from a health perspective, not necessarily a negative event, although it is associated with immediately increased public expenditure compared to continuous employment. Unfortunately we were not able to analyse the extent to which participants changed jobs while sick-listed. However, the current sickness absence compensation law prohibits beneficiaries from actively seeking jobs while receiving benefits. Therefore we would expect job changes to be reflected in a period of non-sick-listed unemployment followed by employment, and with our limited sample size we were not able to demonstrate a higher risk of this the CTWR-group than in the CCM-group.

Finally, the possibility exists that recipients of the intervention constituted a more vulnerable group of sickness absence beneficiaries, particularly as we were not able to ensure completely random allocation to treatments. Heightened depressive, anxiety and somatisation symptoms, and lower self-rated work ability at baseline supports this possibility. Consequently, we adjusted the analyses for these variables, but the more unfavourable results of the intervention group remained statistically significant. Thus, it appears unlikely that heightened vulnerability in terms of the measured variables the intervention group at baseline can explain our results. However, we cannot rule out that the groups differed in terms of other, unmeasured variables at baseline of importance for both time to and stability of RTW.

Strengths and limitations

A considerable strength of the present study is that we were able to follow participants for a relatively long time in the most accurate and comprehensive register of social transfer payments in Denmark (RSS). Furthermore, we included several relevant, related outcomes, all of which showed the same trend towards poorer labour market attachment among CTWR-recipients after two years. However, as we were not able to establish completely randomised treatment allocation, we cannot rule out the possibility of bias caused by unmeasured confounding. Furthermore, the limited sample size and thus number of events of interest (recurrent sickness absence and unemployment) restricts the power of our analyses.

Conclusion

In the present sample, the CTWR-intervention did not lead to a more stable RTW when compared to CCM. Recipients of the intervention had accumulated more sickness absence, fewer were self-supported at the end of the two year follow-up, and there was no indication of a lower risk of recurrent sickness absence or unemployment. In light of the previous finding that the intervention delayed RTW when compared to conventional, municipal case management, the CTWR-intervention does not appear to provide any labour market-related benefits among Danish sickness absence beneficiaries with MHPs.

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Declaration of interest:

The authors report no declarations of interest

Table 1: Characteristics of participants at baseline

Registry data		**CTWR** (n=88)	**CCM** (n=80)	p
Gender, % (n)	Women	78 (69)	83 (67)	0.38
	Men	22 (19)	16 (13)	
Age, mean (SD)		41 (10.2)	41 (9.2)	0.99
Weeks on sickness absence at recruitment, mean (SD)		8.2 (3.2)	8.9 (3.9)	0.08
Weeks on sickness absence in previous year, mean (SD)		1.3 (4.5)	1.4 (3.8)	0.60
Weeks of unemployment in previous year, mean (SD)		1.2 (5.5)	1.3 (4.8)	0.34

Questionnaire data		**CTWR** (n=59)	**CCM** (n=56)	p
Occupational group (ESeC), %	Managers & professionals	48 (28)	46 (26)	0.99
	Intermediate	39 (23)	39 (22)	
	Working class	14 (8)	14 (8)	
Employed at baseline, % (n)	No	24 (14)	29 (16)	0.55
	Yes	76 (45)	71 (40)	
SCL-ANX4 (0-4), mean (SD)		3.1 (1.1)	2.7 (1.2)	0.06 [2)]
SCL-SOM (0-12), mean (SD)		8.2 (3.0)	7.1 (2.6)	0.03 [2)]
MDI (0-50), mean (SD)		26.8 (10.0)	23.3 (10.6)	0.07 [3)]
General health perception (1-5), mean (SD)		2.6 (1.0)	2.5 (0.9)	0.61 [2)]
Self-rated work ability (0-10), mean (SD)		3.1 (2.5)	4.1 (2.4)	0.02 [2)]

SCL-ANX4: Symptom Checklist 90 revised -Anxiety scale; **SCL-SOM:** Symptom Checklist 90 revised – Somatic distress scale
MDI: Major Depression Inventory; 1) Chi-squared test ; 2) Mann-Whitney U-test ; 3) Student's t-test

Table 2: Labour market status at the end of follow-up (104 weeks)

	All participants 1)				**Participants with questionnaire data** 2)			
Status, %(n)	**CTWR** (n=88)	**CCM** (n=80)	OR[3)] (95% CI)	p	**CTWR** (n=59)	**CCM** (n=56)	OR[3)] (95% CI)	p
Self-supported (RTW)	52 (46)	69 (55)	2.19 (1.14-4.22)	0.02	53 (31)	70 (39)	3.00 (1.17-7.81)	0.02
Receiving sickness absence benefits	13 (11)	5 (4)	2.46 (0.74-8.23)	0.14	10 (6)	7 (4)	0.81 (0.13-4.91)	0.82
Receiving unemployment benefits	16 (14)	13 (10)	1.41 (0.55-3.60)	0.47	20 (12)	13 (7)	4.75 (1.13-19.96)	0.03
Receiving disability benefits	2 (2)	3 (2)	0.79 (0.08-7.57)	0.84	2 (1)	3 (1)	-	1.00
Other (further education, pensioning, maternity leave, emigration, death)	17 (15)	11 (9)	1.80 (0.71-4.57)	0.21	15 (9)	9 (5)	1.61 (0.41-6.37)	0.50

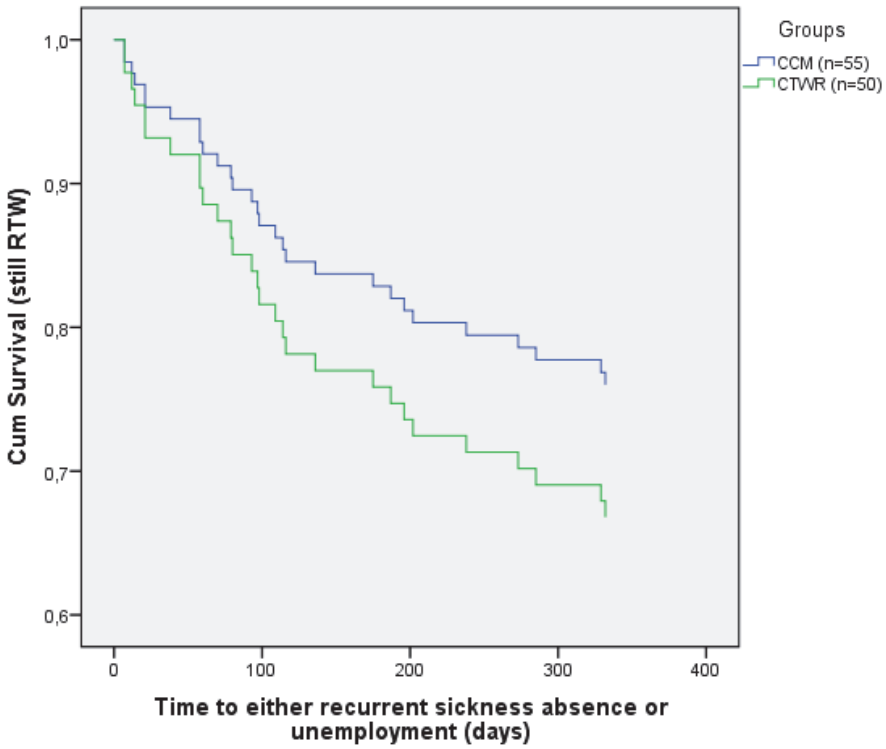
1) Logistic regression, adjusted for gender, age, sickness absence at recruitment, previous sickness absence and unemployment
2) Logistic regression, adjusted for gender, age, sickness absence at recruitment, occupational group, previous sickness absence and unemployment, employment status, occupational group, workability, general health, and symptoms of anxiety, somatization and depression
3) Odds ratios are in relation to not being self-supported in the the CCM-group, i.e. higher odds indicate less likelihood of being self-supported.

Table 3: Risk of recurrent sickness absence or unemployment after RTW

	HR (95% CI)		
	Crude	**Model I**	**Model II**
Event-free survival (all cause hazard)			
All participants			
CCM (n=55)	Reference	Reference	-
CTWR (n=50)	1.47 (0.71-3.06)	1.43 (0.65-3.13)	-
Participants with complete baseline questionnaire data			
CCM (n=41)	Reference	Reference	Reference
CTWR (n=36)	1.28 (0.58-2.80)	1.53 (0.64-3.67)	2.03 (0.75-5.46)
Cause specific hazard: recurrent sickness absence			
All participants			
CCM (n=55)	Reference	Reference	-
CTWR (n=50)	0.95 (0.26-3.56)	1.25 (0.32-4.92)	-
Participants with complete baseline questionnaire data			
CCM (n=41)	Reference	Reference	Reference
CTWR (n=36)	1.17 (0.29-4.70)	1.90 (0.42-8.53)	1.46 (0.19-11.20)
Cause specific hazard: unemployment			
All participants			
CCM (n=55)	Reference	Reference	Reference
CTWR (n=50)	1.79 (0.73-4.39)	1.41 (0.53-3.78)	-
Participants with complete baseline questionnaire data			
CCM (n=41)	Reference	Reference	Reference
CTWR (n=36)	1.33 (0.51-3.46)	1.32 (0.44-3.96)	2.33 (0.63-8.61)

Model I is adjusted for gender, age, time to RTW, sickness absence in previous year, and unemployment in previous year.
Model II is adjusted for gender, age, time to RTW, sickness absence in previous year, unemployment in previous year, employment status, occupational group, general health, work ability, and symptoms of depression, anxiety and somatisation. **Note:** Model II could only be applied to participants who completed the baseline questionnaire.

Figure 1: Time to either event (event-free survival), crude (p=0.30)



Reference List

1. Bryngelson A. Long-term sickness absence and social exclusion. Scand J Public Healt 2009;37:839-45.
2. Lim D, Sanderson K, Andrews G. Lost productivity among full-time workers with mental disorders. J Mental Health Pol Econ 2000;3:139-46.
3. OECD. Sickness, Disability and Work: Breaking the Barriers. A synthesis of findings across OECD countries. OECD Publishing; 2010.
4. Sletting, L. J. and Elmer, D. [Internet]. 2013 September - Available from: http://agenda.dk/2013/09/faerre-paa-foep-pga-stress/
5. Young A, Roessler R, Wasiak R, McPherson K, Poppel M, Anema J. A Developmental Conceptualization of Return to Work. J Occup Rehabil 2005;15:557-68.
6. Burcusa SL, Iacono WG. Risk for recurrence in depression. Clin Psychol Rev 2007;27:959-85.
7. Yonkers KA, Bruce SE, Dyck IR, Keller MB. Chronicity, relapse, and illness--course of panic disorder, social phobia, and generalized anxiety disorder: findings in men and women from 8 years of follow-up. Depress Anxiety 2003;17:173-9.
8. Reis RJ, Utzet M, La Rocca PF, Nedel FB, Martin M, Navarro A. Previous sick leaves as predictor of subsequent ones. Int Arch Occ Env Hea 2011;84:491-9.
9. Koopmans PC, Bultmann U, Roelen CA, Hoedeman R, van der Klink JJ, Groothoff JW. Recurrence of sickness absence due to common mental disorders. Int Arch Occ Env Hea 2011;84:193-201.
10. Koopmans PC, Roelen CA, Groothoff JW. Frequent and long-term absence as a risk factor for work disability and job termination among employees in the private sector. Occup Environ Med 2008;65:494-9.
11. Pedersen J, Bjørner JB, Burr H, Christensen KB. Transitions between sickness absence, work, unemployment, and disability in Denmark 2004-2008. Scand J Work Env Hea 2012.
12. Noordik E, van der Klink JJ, Geskus RB, de Boer MR, van Dijk FJ, Nieuwenhuijsen K. Effectiveness of an exposure-based return-to-work program for workers on sick leave due to common mental disorders: a cluster-randomized controlled trial. Scand J Work Env Hea 2012.
13. van der Klink JJL, Blonk RWB, Schene AH, van Dijk FJH. Reducing long term sickness absence by an activating intervention in adjustment disorders: a cluster randomised controlled design. Occup Environ Med 2003;60:429-37.
14. Rebergen DS, Bruinvels DJ, Bezemer PD, van der Beek AJ, van Mechelen W. Guideline-based care of common mental disorders by occupational physicians (CO-OP study): a randomized controlled trial. J Occup Env Med 2009;51:305-12.
15. Dekkers-Sanchez PM, Wind H, Sluiter JK, Hw Frings-Dresen MH. What promotes sustained return to work of employees on long-term sick leave? Perspectives of vocational rehabilitation professionals. Scand J Work Env Hea 2011;37:481-93.

16. Aust B, Helverskov T, Nielsen MB, Bjorner JB, Rugulies R, Nielsen K, Sorensen OH, Grundtvig G, Andersen MF, Hansen JV, Buchardt HL, Nielsen L, Lund TL, Andersen I, Andersen MH, Clausen AS, Heinesen E, Mortensen OS, Ektor-Andersen J, Orbaek P, Winzor G, Bultmann U, Poulsen OM. The Danish national return-to-work program--aims, content, and design of the process and effect evaluation. Scand J Work Env Hea 2012;38:120-33.

17. Borg V, Nexø M, Kolte I, Andersen M. Hvidbog om mentalt helbred, sygefravær og tilbagevenden til arbejde [White paper on mental health, sickness absence and return to work] [Danish]. Copenhagen: The National Research Centre for the Working Environment; 2010.

18. Martin MH, Nielsen MB, Madsen IE, Petersen SM, Lange T, Rugulies R. Effectiveness of a Coordinated and Tailored Return-to-Work Intervention for Sickness Absence Beneficiaries with Mental Health Problems. J Occup Rehabil 2013;23:621-30.

19. Martin MH, Nielsen MB, Petersen SM, Jakobsen LM, Rugulies R. Implementation of a Coordinated and Tailored Return-to-Work Intervention for Employees with Mental Health Problems. J Occup Rehabil 2012;22:427-36.

20. World Health Organization. International Statistical Classification of Diseases and Related Health Problems, 10th Revision . 2007.

21. Bültmann U, Sherson D, Olsen J, Hansen CL, Lund T, Kilsgaard J. Coordinated and tailored work rehabilitation: a randomized controlled trial with economic evaluation undertaken with workers on sick leave due to musculoskeletal disorders. J Occup Rehabil 2009;19:81-93.

22. Sekjær, K [Internet]. 2011 February 13 - [cited 2012 February 15]; Available from: http://www.information.dk/259442

23. Pedersen J, Villadsen E, Burr H., Martin MHT, Nielsen MBD, Meinertz L. Register for sygedagpenge og sociale ydelser i Danmark [The Danish register of sickness absence compensation and social transfer payments][Danish]. Copenhagen: The National Research Centre for the Working Environment; 2011.

24. Varadhan R, Weiss CO, Segal JB, Wu AW, Scharfstein D, Boyd C. Evaluating health outcomes in the presence of competing risks: a review of statistical methods and clinical applications. Med Care 2010;48:S96-105.

25. Virtanen M, Kawachi I, Oksanen T, Salo P, Tuisku K, Pulkki-Raback L, Pentti J, Elovainio M, Vahtera J, Kivimaki M. Socio-economic differences in long-term psychiatric work disability: prospective cohort study of onset, recovery and recurrence. Occup Environ Med 2011;68:791-8.

26. Rose D, Harrison E. The European socio-economic classification: A new social class schema for comparative European research. Eur Societies 2007;9:459-90.

27. Ware JEJr, Sherbourne CD. The MOS 36-item short-form health survey (SF-36). I. Conceptual framework and item selection. Med Care 1992;30:473-83.

28. Bech P, Rasmussen NA, Olsen LR, Noerholm V, Abildgaard W. The sensitivity and specificity of the Major Depression Inventory, using the Present State Examination as the index of diagnostic validity. J Affect Dis 2001;66:159-64.

29. Derogatis LR. SCL-90-R. Administration, scoring and procedures. MANUAL-II. Townson MD; 1983.

30. Den Centrale Videnskabsetiske Kommite [The Danish Committee System on Biomedical Research Ethics] [Internet]. 2011 May 5 - [cited 2012 September 21]; Available from: http://www.cvk.sum.dk/English/guidelinesaboutnotification.aspx#AFSNIT 2.0.
31. Liljegren M, Ekberg K. Job mobility as predictor of health and burnout. J Occup Organ Psych 2009;82:317-29.
32. Swaen GM, Kant IJ, van Amelsvoort LG, Beurskens AJ. Job mobility, its determinants, and its effects: longitudinal data from the Maastricht Cohort Study. J Occup Health Psychol 2002;7:121-9.

Appendix III

Appendix III: Comparison of registered and non-registered participants

Table A3.1: Comparison of registered and non-registered participants

	Groups		
Outcome	**Registered** (n=88)	**Non-registered** (n=36)	p*
Length of sickness absence (weeks)	34	30	0.15
Cumulative sickness absence year 1 (days)	246	207	0.11
Cumulative sickness absence year 2 (days)	290	218	0.22

*Mann-Whitney U-test

Table A3.2: Labour market status at follow-up, registered vs non-registered participants

	Groups		
Status after year 1, %(n)	**Registered** (n=88)	**Non-registered** (n=36)	p*
Self-supported (RTW)	51 (45)	66 (25)	0.13
Receiving sickness absence benefits	35 (31)	13 (5)	0.02
Receiving unemployment benefits	8 (7)	13 (5)	0.36
Other (further education, pensioning, maternity leave, emigration, death)	6 (5)	8 (3)	0.63
Status after year 2, %(n)			
Self-supported (RTW)	52 (46)	63 (24)	0.26
Receiving sickness absence benefits	13 (11)	11 (4)	0.73
Receiving unemployment benefits	16 (14)	18 (7)	0.75
Receiving disability benefits	2 (2)	3 (1)	0.89
Other (further education, pensioning, maternity leave, emigration, death)	17 (15)	5 (2)	0.09

*Logistic regression adjusted for gender

Appendix IV

Appendix IV: Per protocol analyses of time to RTW

Table A4: Time to RTW among per protocol participants

		Estimated HR (95 % CI)			
	Median time to RTW (weeks)	**Crude model**	**Model I**	**Model II**	**IV-analysis**
All participants					
CCM (n=80)	23	1.00	1.00	-	1.00
CTWR (n=55)	47	0.48 (0.30-0.76)	0.38 (0.24-0.62)	-	0.67 (0.20–2.29)
Participants with complete baseline questionnaire data					
CCM (n=56)	21	1.00	1.00	1.00	1.00
CTWR (n=48)	36	0.47 (0.27-0.79)	0.37 (0.22-0.64)	0.32 (0.17-0.60)	0.39 (0.10–1.55)

CCM: Conventional case management; **CTWR**: Coordinated and tailored work rehabilitation; **Model I**: Adjusted for age, gender, previous sickness absence, and length of sickness absence at recruitment; **Model II**: Further adjusted for occupational group, reason for sickness absence, depressive, anxiety and somatisation symptoms, general health perception, work ability and RTW-expectancy
Note: Model II could only be calculated for participants who completed the baseline questionnaire

Appendix V

Appendix V: Specificity analyses

Table A5.1: Labour market status at follow-up as a function of intervention and individual characteristics

N=115	P*		
Year 1	*Self-supported (RTW)*	*Sickness absence benefits*	*Unemployment benefits*
Intervention x Age at recruitment	0.32	0.40	0.82
Intervention x Gender	0.47	0.27	1.00
intervention x Occupational group	0.48	0.44	1.00
Intervention x Employed/unemployed	0.81	0.77	0.38
Intervention x Reason for sickness absence	0.40	0.61	0.66
Intervention x Self-rated work ability	0.45	0.60	0.08
Intervention x General health perception	0.25	0.39	0.74
Intervention x Self-reported RTW-expectancy	0.07	0.56	0.24
Year 2	*Self-supported (RTW)*	*Sickness absence benefits*	*Unemployment benefits*
Intervention x Age at recruitment	0.49	0.49	0.57
Intervention x Gender	0.23	0.83	0.55
intervention x Occupational group	0.54	0.90	0.79
Intervention x Employed/unemployed	0.32	1.00	0.36
Intervention x Reason for sickness absence	1.00	0.99	1.00
Intervention x Self-rated work ability	0.67	0.77	0.98
Intervention x General health perception	0.68	0.13	0.23
Intervention x Self-reported RTW-expectancy	0.59	0.72	0.76

*Logistic regression (crude) adjusted only for main effects

Table A5.2: RTW as a function of intervention and individual characteristics

Participants with complete baseline questionnaire data (n=115)	Estimated HR (95 % CI)		
	Estimated HR*	**95% CI**	**p**
Intervention x age	0.013	0.966-1.062	0.60
Intervention x Gender	0.713	0.227-2.243	0.56
Intervention x Occupational group	0.498	0.107-2.325	0.38
Intervention x Employed/unemployed	1.805	0.512-6.367	0.36
Intervention x Reason for sickness absence	1.238	0.490-3.130	0.66
Intervention x Self-rated work ability	0.923	0.756-1.127	0.43
Intervention x General health perception	0.888	0.584-1.349	0.58
Intervention x Self-reported RTW-expectancy	0.825	0.664–1.024	0.08

*Cox proportional hazards regression adjusted for main effects

Appendix VI

Appendix VI: Labour market status at follow-up adjusted for questionnaire variables

Table A6: Labour market status at follow-up among questionnaire respondents in Copenhagen

Status, %(n) Year 1	**Groups**		
	CTWR (n=59)	**CCM** (n=56)	p[1)]
Self-supported (RTW)	56 (33)	64 (36)	0.35
Receiving sickness absence benefits	20 (11)	32 (19)	0.12
Receiving unemployment benefits	9 (5)	11 (6)	0.78
Receiving disability benefits	0 (0)	2 (1)	1.00
Other (further education, pension, maternity leave, emigration, death)	3 (2)	4 (2)	1.00
Year 2	**CTWR** (n=59)	**CCM** (n=56)	p[1)]
Self-supported (RTW)	53 (31)	70 (39)	0.02
Receiving sickness absence benefits	10 (6)	7 (4)	0.82
Receiving unemployment benefits	20 (12)	13 (7)	0.03
Receiving disability benefits	2 (1)	2 (1)	1.00
Other (further education, pension, maternity leave, emigration, death)	15 (9)	9 (5)	0.50

1) Logistic regression adjusted for gender, age, sickness absence at recruitment, previous sickness absence, employment status, occupational class, general health perception, work ability and symptoms of depression, anxiety and somatisation.

Appendix VII

Appendix VII: Questionnaires

- Baseline
- Follow-up

SPØRGESKEMA

Sygefravær og velbefindende

DET NATIONALE FORSKNINGSCENTER
FOR ARBEJDSMILJØ
Lersø Parkallé 105 – 2100 København Ø

Sådan udfyldes spørgeskemaet:

Formålet med dette spørgeskema er at spørge dig - som er sygemeldt - om din oplevelse af din sygemelding og dit helbred og velbefindende.

Det er vigtigt for undersøgelsens kvalitet, at du så vidt muligt svarer på alle spørgsmålene.

Det tager ca. 15 minutter at udfylde skemaet. Du svarer på de fleste spørgsmål ved at sætte et kryds. Ved nogle spørgsmål skal du skrive et tal eller ganske få ord. Der er afsat plads til, at du kan forklare tingene nærmere til allersidst i skemaet.

Eksempel på talbesvarelse

9. I hvilket år blev du ansat på den arbejdsplads, du er sygemeldt fra?

År 1 9 8 7

Eksempel på afkrydsning

15. I hvilken grad har følgende forhold i dit arbejdsliv haft betydning for din sygemelding?

	I meget høj grad	I høj grad	Delvist	I ringe grad	Slet ikke	
1. For stor arbejdsmængde.....	☐	☒	☐	☐	☐	Korrekt afkrydsning
2. For lidt indflydelse på arbejdet.....	☐	☒	☒	☐	☐	Rettet afkrydsning

Kommer du til at sætte krydset i en forkert boks, så streg hele boksen ud og sæt krydset i den rigtige boks.

Du er velkommen til at ringe til os, hvis du er i tvivl om noget med skemaet eller med undersøgelsen i det hele taget.

Vi glæder os til at modtage din besvarelse.

Med venlig hilsen

Malene Salskov Amby
tlf.: 39165487

Pernille Mikkelsen
tlf.: 39165487

Skriv venligst, hvilken dato du udfylder skemaet:

Dag Måned År

De første spørgsmål handler om dig selv

1. Er du kvinde eller mand?

Kvinde..... ☐

Mand..... ☐

2. Hvilket år er du født?

År 1 9 | | |

3. Hvem bor du sammen med?
(Du må gerne sætte flere krydser)

Ægtefælle/ samlever..... ☐

Børn (egne eller partners)..... ☐ Skriv antal | |

Jeg bor alene..... ☐

Andre end ægtefælle/ samlever eller børn.... ☐

Din uddannelse og dit arbejde

4. Hvad er din højeste erhvervsuddannelse?
(Sæt kun ét kryds)

Ingen erhvervsuddannelse..... ☐

Specialarbejderuddannelse, under 12 mdr..... ☐

Basisår i EFG-uddannelse eller handelsskolernes grunduddannelse (HG)..... ☐

Lærlinge-, EFG- eller HG-uddannelse..... ☐

Anden faglig uddannelse..... ☐

Kort videregående uddannelse, under 3 år..... ☐

Mellemlang videregående uddannelse, 3-4 år..... ☐

Lang videregående uddannelse, over 4 år..... ☐

Anden uddannelse..... ☐

Hvis anden uddannelse, skriv hvilken _____

5. Hvad er din højeste skoleuddannelse?
(Sæt kun ét kryds)

7 eller færre års skolegang..... ☐

8-9 års skolegang..... ☐

10 års skolegang..... ☐

Studenter-, HF-eksamen (inkl. HHX, HTX)..... ☐

Anden uddannelse..... ☐

Hvis anden uddannelse, skriv hvilken _____

6. Hvad var din hovedbeskæftigelse, da du blev sygemeldt?
(Dvs. den beskæftigelse du brugte mest tid på. Sæt kun ét kryds)

Selvstændig..... ☐ Antal ansatte |__|__|__|__|

Medhjælpende ægtefælle..... ☐

Ledende funktionær eller tjenestemand..... ☐ Antal underordnede |__|__|__|__|

Funktionær eller tjenestemand..... ☐

Faglært arbejder..... ☐

Specialarbejder eller ikke-faglært arbejder..... ☐

Lærling/elev..... ☐

Andet..... ☐

Hvis andet, skriv hvad _____

7. Hvad slags arbejdsplads arbejdede du på, da du blev sygemeldt?
(F.eks. hospital, maskinfabrik, møbelforretning, folkeskole, revisorfirma, restaurant)

_____

8. Hvad var din stilling mere præcist?
(F.eks. folkeskolelærer, kontorchef i skattevæsenet, ekspedient, sygeplejerske i hjemmeplejen, advokatfuldmægtig, edb-konsulent)

_____

9. I hvilket år blev du ansat på den arbejdsplads, du er sygemeldt fra?

År |__|__|__|__|

10. Hvordan er din nuværende situation i forhold til din arbejdsplads?

Er stadig ansat..... ☐

Har selv sagt op..... ☐

Har modtaget opsigelse..... ☐

Andet..... ☐

Hvis andet, skriv hvad _____

Din sygemelding

11. Hvilken dato blev du sygemeldt?

Dag Måned År

12. Hvordan er du sygemeldt?

Helt fraværende..... ☐

Delvist fraværende..... ☐

13. Hvad er årsagen til din sygemelding?
(Du må gerne sætte flere krydser)

Stress..... ☐

Depression..... ☐

Angstlidelse..... ☐

Manio-depression..... ☐

Udbrændthed..... ☐

Kronisk træthed..... ☐

Bevægeapparatsproblemer..... ☐

Andet..... ☐

Hvis andet, skriv hvad _____

14. Hvilke forhold, mener du, har haft en <u>væsentlig</u> betydning for din sygemelding?
(Du må gerne sætte flere krydser)

Forhold i arbejdslivet..... ☐

Forhold i privatlivet..... ☐

Ved ikke..... ☐

Andre forhold..... ☐

Hvis andre forhold, skriv hvilke _____

15. I hvilken grad har følgende forhold i dit arbejdsliv haft betydning for din sygemelding?

	I meget høj grad	I høj grad	Delvist	I ringe grad	Slet ikke
1. For stor arbejdsmængde.....	☐	☐	☐	☐	☐
2. For lidt indflydelse på arbejdet.....	☐	☐	☐	☐	☐
3. For stort tidspres.....	☐	☐	☐	☐	☐
4. Manglende udviklingsmuligheder.....	☐	☐	☐	☐	☐
5. At jeg blev uretfærdigt behandlet på min arbejdsplads.....	☐	☐	☐	☐	☐
6. Manglende støtte fra kollegaer.....	☐	☐	☐	☐	☐
7. Manglende støtte fra nærmeste leder.....	☐	☐	☐	☐	☐
8. Arbejdsulykke.....	☐	☐	☐	☐	☐
9. Uønskede ændringer på min arbejdsplads.....	☐	☐	☐	☐	☐
10. Konflikter med kollegaer, overordnede, klienter, borgere eller andre.....	☐	☐	☐	☐	☐
11. Vold eller trusler fra kollegaer, overordnede, klienter, borgere eller andre.....	☐	☐	☐	☐	☐
12. At jeg blev udsat for mobning af kollegaer, overordnede, klienter, borgere eller andre.....	☐	☐	☐	☐	☐
13. Andre forhold.....	☐	☐	☐	☐	☐

Hvis andre forhold, skriv hvilke _____

16. Er der nogen fra arbejdspladsen, der har kontaktet dig, efter du blev sygemeldt?
(Du må gerne sætte flere krydser)

Ja, kollega..... ☐

Ja, nærmeste leder..... ☐

Ja, øverste leder..... ☐

Ja, sikkerhedsrepræsentant.... ☐

Ja, tillidsrepræsentant..... ☐

Nej..... ☐

Anden..... ☐

Hvis anden, skriv hvem _____

17. Er der blevet gjort noget fra arbejdspladsens side for at hjælpe dig tilbage til arbejde?

Nej..... ☐

Ja..... ☐

Hvis ja, skriv evt. hvad der blev gjort?

_____

_____

_____

18. Hvordan synes du, din arbejdsplads har håndteret din sygemelding?

Fremragende..... ☐

Vældig godt..... ☐

Godt..... ☐

Mindre godt..... ☐

Dårligt..... ☐

Skriv evt. hvorfor

_____

19. Hvordan passer følgende udsagn på din situation….

(Tag venligst stilling til hvert enkelt udsagn og sæt ét kryds i hver linie)

	Helt enig	Enig	Hverken enig eller uenig	Uenig	Helt uenig
1. Mine kollegaer vil gerne have, at jeg kommer tilbage på arbejde igen, når jeg føler mig klar.....	☐	☐	☐	☐	☐
2. Min nærmeste leder vil gerne have, at jeg kommer tilbage på arbejde igen, når jeg føler mig klar.....	☐	☐	☐	☐	☐
3. Jeg er bange for at miste mit arbejde, hvis jeg ikke begynder at arbejde igen snart.....	☐	☐	☐	☐	☐
4. Den kompensation jeg modtager nu opfylder mine økonomiske behov.....	☐	☐	☐	☐	☐
5. Min nærmeste leder forsøger at presse mig til at sige op.....	☐	☐	☐	☐	☐
6. Min nærmeste leder presser mig, til at begynde på arbejde igen, selvom jeg ikke føler mig parat.....	☐	☐	☐	☐	☐

20. Hvis du kan vælge frit, i hvor høj grad vil du så gerne tilbage på den arbejdsplads, du er sygemeldt fra?

I meget høj grad..... ☐

I høj grad..... ☐

Delvist..... ☐

I ringe grad..... ☐

Slet ikke..... ☐

21. I hvor høj grad overvejer du, at skifte branche?

I meget høj grad..... ☐

I høj grad..... ☐

Delvist..... ☐

I ringe grad..... ☐

Slet ikke..... ☐

22. Hvor stor tror du, at chancen er for, at du kan arbejde om 6 måneder?

0	1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Ingen chance — Meget stor chance

23. Er der i forbindelse med din sygemelding iværksat....

(Du må gerne sætte flere krydser)

En arbejdsskadesag..... ☐

En forsikringssag..... ☐

En erstatningssag..... ☐

En afskedigelsessag..... ☐

Ingen af delene..... ☐

Andet..... ☐

Hvis andet, skriv hvad _____

Dit helbred og velbefindende

24. Hvordan synes du, dit helbred er alt i alt?

Fremragende..... ☐

Vældig godt..... ☐

Godt..... ☐

Mindre godt..... ☐

Dårligt..... ☐

Nedenstående spørgsmål handler om, hvordan du har haft det gennem de sidste 2 uger.

25. Hvor stor en del af tiden....

	Hele tiden	Det meste af tiden	Lidt over halvdelen af tiden	Lidt under halvdelen af tiden	Lidt af tiden	På intet tidspunkt
1. Har du følt dig trist til mode, ked af det?	☐	☐	☐	☐	☐	☐
2. Har du manglet interesse for dine daglige gøremål?	☐	☐	☐	☐	☐	☐
3. Har du følt, at du manglede energi og kræfter?	☐	☐	☐	☐	☐	☐
4. Har du haft mindre selvtillid?	☐	☐	☐	☐	☐	☐
5. Har du haft dårlig samvittighed eller skyldfølelse?	☐	☐	☐	☐	☐	☐
6. Har du følt, at livet ikke var værd at leve?	☐	☐	☐	☐	☐	☐
7. Har du haft besvær med at koncentrere dig, f.eks. at læse avis eller følge med i fjernsyn?	☐	☐	☐	☐	☐	☐
8. Har du følt dig rastløs?	☐	☐	☐	☐	☐	☐
9. Har du følt dig stille eller fåmælt?	☐	☐	☐	☐	☐	☐
10. Har du haft besvær med at sove om natten?	☐	☐	☐	☐	☐	☐
11. Har du haft nedsat appetit?	☐	☐	☐	☐	☐	☐
12. Har du haft øget appetit?	☐	☐	☐	☐	☐	☐

26. I løbet af de sidste 2 uger, hvor meget har du været generet af….

	Virkelig meget	En hel del	Noget	Lidt	Slet ikke
1. Hovedpine?	☐	☐	☐	☐	☐
2. Svimmelhed eller tilløb til at besvime?	☐	☐	☐	☐	☐
3. Smerter i hjerte eller bryst?	☐	☐	☐	☐	☐
4. Lavtsiddende rygsmerter?	☐	☐	☐	☐	☐
5. Kvalme eller uro i maven?	☐	☐	☐	☐	☐
6. Muskelsmerter?	☐	☐	☐	☐	☐
7. At du har svært ved at få vejret?	☐	☐	☐	☐	☐
8. Anfald af varme eller kuldefornemmelser?	☐	☐	☐	☐	☐
9. Følelsesløshed eller en snurrende fornemmelse i kroppen?	☐	☐	☐	☐	☐
10. En klump i halsen?	☐	☐	☐	☐	☐
11. At du føler dig svag i kroppen?	☐	☐	☐	☐	☐
12. At dine arme eller ben føles tunge?	☐	☐	☐	☐	☐
13. At du pludseligt blev bange uden grund?	☐	☐	☐	☐	☐
14. Nervøsitet eller indre uro?	☐	☐	☐	☐	☐
15. Anfald af rædsel eller panik?	☐	☐	☐	☐	☐
16. At bekymre dig for meget?	☐	☐	☐	☐	☐

27. Hvis du har problemer, kan du så få den nødvendige hjælp og støtte fra din familie eller venner?

Altid ☐

Ofte ☐

Af og til ☐

Sjældent ☐

Aldrig ☐

Din arbejdsevne

28. Forestil dig, at din arbejdsevne er 10 point værd, når den er bedst. Hvor mange point vil du give din nuværende arbejdsevne?

0	1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Ude af stand til at arbejde — Bedste arbejdsevne

29. Hvordan er kravene i det arbejde, du er sygemeldt fra?

Primært mentale
(f.eks. viden, kreativitet, ansvar, evne til at samarbejde)..... ☐

Primært fysiske
(f.eks. styrke, udholdenhed, bevægelighed, behændighed). ☐

Både mentale og fysiske..... ☐

30. Hvordan vurderer du din nuværende arbejdsevne i forhold til de <u>fysiske</u> krav i det arbejde, du er sygemeldt fra?

Meget god..... ☐

God..... ☐

Nogenlunde..... ☐

Dårlig..... ☐

Meget dårlig..... ☐

31. Hvordan vurderer du din nuværende arbejdsevne i forhold til de <u>mentale</u> krav i det arbejde, du er sygemeldt fra?

Meget god..... ☐

God..... ☐

Nogenlunde..... ☐

Dårlig..... ☐

Meget dårlig..... ☐

Behandling

32. Har du inden for de sidste 3 måneder været i kontakt med en professionel behandler på grund af fysiske eller psykiske helbredsproblemer?
(Du må gerne sætte flere krydser)

Nej..... ☐

Egen læge..... ☐

Speciallæge..... ☐ Skriv hvilken _____

Psykolog..... ☐

Psykiater..... ☐

Anden behandler..... ☐ Skriv hvilken _____

33. Har du inden for de sidste 3 måneder brugt?
(Du må gerne sætte flere krydser)

Beroligende midler, herunder nervemedicin.. ☐

Sovemedicin..... ☐

Antidepressiv medicin..... ☐

Smertestillende..... ☐

Ingen af delene..... ☐

Andet..... ☐

Hvis andet, skriv hvad _____

34. Har du flere kommentarer om dit arbejde, din sygemelding eller spørgeskemaet, skriv dem venligst her:

Tak for at du ville deltage i undersøgelsen. Vi er meget glade for din besvarelse.

SPØRGESKEMA

Sygefravær og velbefindende

2

Det Nationale Forskningscenter for Arbejdsmiljø
Lersø Parkallé 105 2100 København Ø

PIVA
Psykisk Velbefindende og Arbejde

Dette er anden del af vores undersøgelse om "Sygefravær og velbefindende".

Formålet med dette spørgeskema er at spørge dig, hvordan du har det nu og høre om dine oplevelser i forbindelse med din sygemelding frem til i dag. Vi tænker her på den sygemelding, vi spurgte til, da du besvarede vores første spørgeskema for ca. 9 mdr. siden.

Sådan udfyldes spørgeskemaet:

Det er vigitigt for undersøgelsens kvalitet, at du så vidt muligt svarer på alle spørgsmålene.

Det tager ca. 25 minutter at udfylde skemaet. Du svarer på de fleste spørgsmål ved at sætte et kryds. Ved nogle spørgsmål skal du skrive tal eller ganske få ord. Til allersidst i skemaet er der plads til, at du kan uddybe din besvarelse.

Eksempel på afkrydsning

6. Har du indenfor de sidste 9 måneder søgt om...
(Sæt kun ét kryds i hver linie)

	Ja	Nej, men overvejer at søge	Nej	
1. Førtidspension.....	☐	☒	☐	Korrekt afkrydsning
2. Revalidering.....	☒	☐	▨	Rettet afkrydsning

Eksempel på talbesvarelse

16. Hvad er din ugentlige arbejdstid i dag?
Her tænkes på den aftalte arbejdstid (fx 37 timer om ugen)

Antal timer pr. uge: 32

Kommer du til at sætte krydset i en forkert boks, så streg hele boksen ud og sæt krydset i den rigtige boks

Du er velkommen til at ringe til os, hvis du er i tvivl om noget med skemaet eller med undersøgelsen i det hele taget.

Vi glæder os til at modtage din besvarelse.

Med venlig hilsen

Marie Tiemroth
Tlf. 39165487

Louise Meinertz
Tlf. 39165357

Sygefravær og velbefindende

Skriv venligst, hvilken dato du udfylder skemaet: ⌊ ⌋ ⌊ ⌋ ⌊ ⌋ ⌊ ⌋ ⌊ ⌋ ⌊ ⌋ ⌊ ⌋ ⌊ ⌋
dag måned år

1. Hvad er din erhvervsstatus i øjeblikket?

I arbejde ..... ☐

I arbejde med løntilskud ..... ☐

I flexjob ..... ☐

På revalidering ..... ☐

I arbejdsprøvning ..... ☐

Sygedagpengemodtager på fuldtid ..... ☐

Sygedagpengemodtager på deltid ..... ☐

Arbejdsløsheds-dagpengemodtager ..... ☐

Kontanthjælpsmodtager ..... ☐

Førtidspensionist ..... ☐

Folkepensionist / efterlønner ..... ☐

Elev / lærling (i lære eller praktikplads) ..... ☐

Under uddannelse i øvrigt (skoleelev eller studerende) ... ☐

Hjemmegående ..... ☐

Andet ..... ☐

Hvis andet, skriv hvad: _____

Der foregår ofte en del aktiviteter i forbindelse med en længerevarende sygemelding. De følgende spørgsmål handler om, hvad du har oplevet, siden du for ca. 9 måneder siden modtog spørgeskemaet 'Sygefravær og helbred'.

2. Sæt kryds ved de behandlere, du har været i kontakt med:

	Ingen kontakt	1-3 besøg	3-10 besøg	Over 10 besøg
Egen læge…….	☐	☐	☐	☐
Psykolog…….	☐	☐	☐	☐
Psykiater	☐	☐	☐	☐
Anden speciallæge	☐	☐	☐	☐
Skriv hvilken speciallæge: _____				
Fysioterapeut…….	☐	☐	☐	☐
Ergoterapeut……..	☐	☐	☐	☐
Kiropraktor……..	☐	☐	☐	☐

Se flere svarkatergorier på næste side

3. Sæt kryds ved de ting, du har oplevet :
(Sæt gerne flere krydser)

Personlig samtale hos sagsbehandler ..... ☐

Rundbordssamtale
En rundbordssamtale er en samtale mellem den sygemeldte og fx sagsbehandler, arbejdsgiver og fagforening med henblik på afklaring af den sygemeldtes situation ... ☐

Rådgivning om dine muligheder som sygemeldt ..... ☐

En klar plan for tilbagevenden til arbejde ..... ☐

Samtale med arbejdsgiver ..... ☐

Undervisning i afspænding / stresshåndtering ..... ☐

Undervisning i konfliktløsning / assertion (hvor man lærer at sige fra / nej) ..... ☐

Undervisning i smertehåndtering ..... ☐

Besøg af ergoterapeut, fysioterapeut, psykolog eller lignende på arbejdspladsen ..... ☐

Rådgivning fra ergoterapeut, fysioterapeut, psykolog eller lignende i forhold til dagligdags aktiviteter, fx indkøb, rengøring, motion, at komme ind og ud af bilen ..... ☐

Operation / indlæggelse på sygehus ..... ☐

Arbejdsprøvning ..... ☐

Praktik i en virksomhed ..... ☐

Ansættelse med løntilskud ..... ☐

Start på ny eller videreuddannelse ..... ☐

Andet ..... ☐

Hvis andet, skriv hvad: _____

4. Når du tænker tilbage på det, der er sket i forbindelse med din(e) sygemelding(er) inden for de sidste 9 måneder, hvor enig er du da i følgende udsagn?

	Meget enig	Enig	Hverken enig eller uenig	Uenig	Helt uenig
1. De nødvendige aktører (fx sagsbehandler, læge, arbejdsgiver) blev inddraget …….....	☐	☐	☐	☐	☐
2. Jeg fik den information, jeg havde brug for	☐	☐	☐	☐	☐
3. Der blev taget hånd om mig fra systemets side	☐	☐	☐	☐	☐
4. Jeg skulle selv være opsøgende, for at der skete noget i min sag …….....	☐	☐	☐	☐	☐
5. Jeg har haft indflydelse på forløbet af min sygemelding …….....	☐	☐	☐	☐	☐
6. Der var en klar plan for min behandling ….....	☐	☐	☐	☐	☐
7. Jeg fik den hjælp og støtte, jeg behøvede for at komme tilbage på arbejde	☐	☐	☐	☐	☐
8. Jeg følte mig meget alene i forløbet …….....	☐	☐	☐	☐	☐
9. Jeg måtte igen og igen fortælle de samme ting til forskellige aktører	☐	☐	☐	☐	☐
10. Jeg har modtaget tilstrækkelig fysisk behandling ...	☐	☐	☐	☐	☐
11. Jeg har modtaget tilstrækkelig psykologisk behandling ……..….....	☐	☐	☐	☐	☐
12. Der gik for lang tid inden, der skete noget ….....	☐	☐	☐	☐	☐
13. Der var forståelse for min situation ….....	☐	☐	☐	☐	☐
14. Min arbejdsplads gjorde, hvad den kunne for at hjælpe mig tilbage i arbejde…….....	☐	☐	☐	☐	☐
15. De forskellige aktører var enige om, hvad der skulle ske i min sag…….....	☐	☐	☐	☐	☐
16. Jeg følte, at jeg blev presset til at starte med at arbejde igen	☐	☐	☐	☐	☐

5. Har du generelt været tilfreds med den måde, din sygemelding har været håndteret på?

I meget høj grad ..... ☐

I høj grad ..... ☐

Delvist ..... ☐

I ringe grad ..... ☐

I meget ringe grad / slet ikke .. ☐

6. Har du indenfor de sidste 9 måneder søgt om…

(Sæt kun ét kryds i hver linie)

	Ja	Nej, men overvejer at søge	Nej
1. Førtidspension.....	☐	☐	☐
2. Revalidering.....	☐	☐	☐
3. Fleksjob.....	☐	☐	☐

Dit helbred og velbefindende

7. Hvordan synes du, dit helbred er alt i alt?

Fremragende ..... ☐

Vældig godt ..... ☐

Godt ..... ☐

Mindre godt ..... ☐

Dårligt ..... ☐

De nedenstående spørgsmål handler om, hvordan du har haft det gennem de sidste 2 uger:

8. Hvor stor en del af tiden…

(Sæt kun ét kryds i hver linje)

	Hele tiden	Det meste af tiden	Lidt over halvdelen af tiden	Lidt under halvdelen af tiden	Lidt af tiden	På intet tidspunkt
1. Har du følt dig trist til mode, ked af det?	☐	☐	☐	☐	☐	☐
2. Har du manglet interesse for dine daglige gøremål?	☐	☐	☐	☐	☐	☐
3. Har du følt, at du manglede energi og kræfter?	☐	☐	☐	☐	☐	☐
4. Har du haft mindre selvtillid?	☐	☐	☐	☐	☐	☐
5. Har du haft dårlig samvittighed eller skyldfølelse?	☐	☐	☐	☐	☐	☐
6. Har du følt, at livet ikke var værd at leve?	☐	☐	☐	☐	☐	☐
7. Har du haft besvær med at koncentrere dig, fx at læse avis eller følge med i fjernsyn?	☐	☐	☐	☐	☐	☐
8. Har du følt dig rastløs?	☐	☐	☐	☐	☐	☐
9. Har du følt dig stille eller fåmælt?	☐	☐	☐	☐	☐	☐
10. Har du haft besvær med at sove om natten?.....	☐	☐	☐	☐	☐	☐
11. Har du haft nedsat appetit?	☐	☐	☐	☐	☐	☐
12. Har du haft øget appetit?	☐	☐	☐	☐	☐	☐

9. I løbet af de sidste 2 uger, hvor meget har du været generet af ...

	Virkelig meget	En hel del	Noget	Lidt	Slet ikke
1. Hovedpine?	☐	☐	☐	☐	☐
2. Svimmelhed eller tilløb til at besvime?	☐	☐	☐	☐	☐
3. Smerter i hjerte eller bryst?	☐	☐	☐	☐	☐
4. Lavtsiddende rygsmerter?	☐	☐	☐	☐	☐
5. Kvalme eller uro i maven?	☐	☐	☐	☐	☐
6. Muskelsmerter?	☐	☐	☐	☐	☐
7. At du har haft svært ved at få vejret?	☐	☐	☐	☐	☐
8. Anfald af varme eller kuldefornemmelser? ...	☐	☐	☐	☐	☐
9. Følelsesløshed eller en snurrende fornemmelse i kroppen?	☐	☐	☐	☐	☐
10. En klump i halsen?	☐	☐	☐	☐	☐
11. At du føler dig svag i kroppen?	☐	☐	☐	☐	☐
12. At dine arme eller ben føles tunge?	☐	☐	☐	☐	☐
13. At du pludseligt blev bange uden grund?	☐	☐	☐	☐	☐
14. Nervøsitet eller indre uro?	☐	☐	☐	☐	☐
15. Anfald af rædsel eller panik?	☐	☐	☐	☐	☐
16. At bekymre dig for meget?	☐	☐	☐	☐	☐

Alvorlige begivenheder i livet

10. Har du i løbet af det sidste år været ude for nogle af følgende alvorlige begivenheder?

	Ja	Nej
1. Langvarig eller alvorlig sygdom hos børn ……	☐	☐
2. Langvarige eller alvorlige konflikter med voksne børn…..	☐	☐
3. Langvarige eller alvorlige problemer i parforholdet…….	☐	☐
4. Langvarig eller alvorlig sygdom eller død hos familiemedlem……....	☐	☐
5. Langvarige eller alvorlige økonomiske problemer……..	☐	☐

Hvis du i øjeblikket er **i arbejde på deltid eller fuld tid** (inkl. lære / elevplads, flexjob, job med løntilskud og deltidsraskmeldinger) ⟶ gå til spørgsmål 11

Hvis du i øjeblikket er **sygemeldt fuld tid fra et arbejde** ⟶ gå til spørgsmål 11

Hvis du i øjeblikket er **sygemeldt og ledig** ⟶ gå til spørgsmål 26

Hvis du er **i en anden situation** (fx ledig, på pension, på revalidering eller hjemmegående) ⟶ gå til spørgsmål 29

De følgende spørgsmål er til dig, der på nuværende tidspunkt har et arbejde (fuldtid eller deltid)

11. Hvad er din hovedbeskæftigelse?

Selvstændig ..... ☐ Antal ansatte: ☐☐☐

Medhjælpende ægtefælle ..... ☐

Ledende funktionær eller ledende tjenestemand .... ☐ Antal underordnede: ☐☐☐

Funktionær eller tjenestemand ..... ☐

Faglært arbejder ..... ☐

Specialarbejder eller ikke-faglært arbejder ..... ☐

Lærling / elev ..... ☐

Andet ..... ☐

Hvis andet, skriv hvad: _____

12. Hvilken slags arbejdsplads arbejder du på?

(*F.eks. hospital, maskinfabrik, møbelforretning, folkeskole, revisorfirma, restaurant)*

_____

13. Hvad er din stilling mere præcist?

(F.eks. folkeskolelærer, kontorchef i skattevæsenet, ekspedient, sygeplejerske i hjemmeplejen, advokatfuldmægtig, edb-konsulent)

_____

14. Hvornår er du blevet ansat på den arbejdsplads, du har nu?

Skriv måned og år: ☐☐ ☐☐☐☐

måned år

15. Er det samme arbejdsplads, som du var ansat på for 9 måneder siden?

Ja ..... ☐

Nej ..... ☐

Hvis nej, hvorfor ikke?

Sagde selv op ..... ☐

Modtog opsigelse ..... ☐

Andet ..... ☐

Hvis andet, skriv hvad: _____

_____

_____

Hvis du på nuværende tidspunkt er **sygemeldt på fuld tid** → gå til spørgsmål 26.
Hvis du i øjeblikket **arbejder fuld- eller deltid**, fortsæt venligst…

16. Hvad er din ugentlige arbejdstid i dag?

Her tænkes på den aftalte arbejdstid, (fx 37 timer om ugen)

Antal timer pr. uge: ⌊__⌋⌊__⌋

17. Hvor mange timer arbejder du rent faktisk om ugen i øjeblikket?

Når du medregner overarbejde eller nedsat tid

Antal timer pr. uge: ⌊__⌋⌊__⌋

18. Hvis du arbejder deltid, hvad er så årsagen?
(Sæt gerne flere krydser)

Jeg er delvist sygemeldt/raskmeldt ..... ☐

Jeg er ikke i stand til arbejde fuldtid på grund af psykiske helbredsproblemer ☐

Jeg er ikke i stand til arbejde fuldtid på grund af fysiske helbredsproblemer ... ☐

Jeg foretrækker at arbejde deltid frem for fuldtid ..... ☐

For at få mere tid til familien eller fritidsinteresser ..... ☐

Min arbejdsplads kan ikke give mig fuldtid ..... ☐

Andet ..... ☐

Hvis andet, skriv hvad: _____

19. Havde noget af det følgende betydning for, at du kom tilbage på arbejde?
(Sæt gerne flere krydser)

Andre arbejdsopgaver ..... ☐

Ny nærmeste leder ..... ☐

Nye kolleger ..... ☐

Nedsat arbejdstid ..... ☐

Nye fysiske omgivelser ..... ☐

Længere eller flere pauser ..... ☐

Nye vaner/rutiner i forhold til arbejdet ..... ☐

Hjælpemidler i forbindelse med arbejdet ..... ☐

Andet ..... ☐

Hvis andet, skriv hvad: _____

Intet af ovenstående havde betydning ..... ☐

20. Har du inden for de sidste 9 måneder haft en periode med delvis raskmelding ?

Nej ..... ☐

Ja ..... ☐

21. Er du tilfreds med din nuværende arbejdssituation?

I meget høj grad ..... ☐

I høj grad ..... ☐

Delvist ..... ☐

I ringe grad ..... ☐

I meget ringe grad / slet ikke .. ☐

Din arbejdsevne

22. Kravene i dit arbejde er primært:

Mentale (fx viden, kreativitet, ansvar, evne til at samarbejde) ..... ☐

Fysiske (fx styrke, udholdenhed, bevægelighed, behændighed) ..... ☐

Både mentale og fysiske ..... ☐

23. Hvordan vurderer du din nuværende arbejdsevne i forhold til <u>de fysiske krav</u> i dit job?

Meget god ..... ☐

God ..... ☐

Nogenlunde ..... ☐

Dårlig ..... ☐

Meget dårlig ..... ☐

24. Hvordan vurderer du din nuværende arbejdsevne i forhold til <u>de mentale krav</u> i dit job?

Meget god ..... ☐

God ..... ☐

Nogenlunde ..... ☐

Dårlig ..... ☐

Meget dårlig ..... ☐

25. I de sidste 4 uger, hvor stor en del af tiden gjorde dit fysiske helbred eller dine psykiske problemer det vanskeligt for dig at gøre bestemte dele af dit arbejde?
(Kryds af i feltet 'passer ikke på mit arbejde' hvis spørgsmålet vedrører noget, som ikke er en del af dit job)

Det er vanskeligt at…	Hele tiden (100%)	Det meste af tiden	Halvdelen af tiden (50%)	Noget af tiden	Aldrig (0%)	Passer ikke på mit arbejde
1.Gøre dit arbejde uden at tage ekstra pauser eller hvileperioder	☐	☐	☐	☐	☐	☐
2. Holde fast i en rutine eller plan	☐	☐	☐	☐	☐	☐
3. Afslutte arbejdet til tiden	☐	☐	☐	☐	☐	☐
4. Gøre dit arbejde uden at lave fejl	☐	☐	☐	☐	☐	☐
5. Tilfredsstille de personer, der bedømmer dit arbejde	☐	☐	☐	☐	☐	☐
6. Føle at du har udrettet noget på dit arbejde.....	☐	☐	☐	☐	☐	☐
7. Løfte, bære eller flytte genstande på dit arbejde, som vejer mere end 5 kg	☐	☐	☐	☐	☐	☐
8. Sidde, stå eller forblive i samme stilling længere end 15 minutter, mens du arbejder	☐	☐	☐	☐	☐	☐
9. Bøje, vride eller strække dig imens du arbejder	☐	☐	☐	☐	☐	☐
10. Anvende håndholdt værktøj eller udstyr (fx telefon, pen, tastatur, pc-mus, boremaskine, hårtørrer osv.)	☐	☐	☐	☐	☐	☐
11. Være opmærksom på dit arbejde	☐	☐	☐	☐	☐	☐
12. Koncentrere dig om arbejdet	☐	☐	☐	☐	☐	☐
13. Læse nemt eller bruge øjnene, når du arbejder	☐	☐	☐	☐	☐	☐
14. At have overblik over mere end én opgave ad gangen	☐	☐	☐	☐	☐	☐
15. Tale med mennesker på tomandshånd, på møder eller i telefon	☐	☐	☐	☐	☐	☐
16. Styre dit temperament sammen med andre mennesker, når du arbejder	☐	☐	☐	☐	☐	☐
17. Hjælpe andre mennesker med at få gjort arbejdet	☐	☐	☐	☐	☐	☐

Hvis du er deltidssygemeldt / -raskmeldt → gå til spørgsmål 26. Ellers gå til spørgsmål 29

De følgende spørgsmål er til dig, der på nuværende tidspunkt er sygemeldt

26. Hvilken dato startede din nuværende sygemelding? ☐☐ ☐☐ ☐☐
dag måned år

27. Hvad er årsagen til din nuværende sygemelding?
(Sæt gerne flere krydser)

Stress ..... ☐
Depression ..... ☐
Angstlidelse ..... ☐
Maniodepression ..... ☐
Udbrændthed ..... ☐
Kronisk træthed ..... ☐
Bevægeapparatsproblemer ..... ☐
Andet ..... ☐

Hvis andet, skriv hvad: _____

28. Hvor stor tror du chancen er for, at du kan arbejde om 6 måneder?

Ingen chance — Meget stor chance

0	1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Arbejde og fremtiden

29. Forestil dig, at din arbejdsevne er 10 point værd, når den er bedst. Hvor mange point vil du give din nuværende arbejdsevne?

Ude af stand til at arbejde — Bedste arbejdsevne

0	1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

30. Hvordan tror du, at din situation er på arbejdsmarkedet om 2 år?
(Sæt kun ét kryds)

Jeg vil være i arbejde indenfor mit sædvanlige arbejdsområde ..... ☐

Jeg vil være i arbejde, men ikke inden for mit sædvanlige arbejdsområde .... ☐

Jeg vil ikke være i arbejde mere ..... ☐

Vi overvejer, at undersøge forhold om sygefravær mere i dybden. Vi vil derfor meget gerne høre mere om dig og din historie, enten telefonisk eller ved et personligt interview. Det vil være en stor hjælp, hvis du kan fortælle os om, hvad du har oplevet af positive og negative begivenheder efter du blev sygemeldt, samt hvad du mener, der kan gøres bedre.

31. Må vi evt. kontakte dig i forbindelse med denne undersøgelse?

Ja ..... ☐

Nej ..... ☐

32. Har du flere kommentarer om dit arbejde, din sygemelding eller spørgeskemaet, skriv dem venligst her:

Tak for at du ville deltage i undersøgelsen. Vi er meget glade for din besvarelse.

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SL grafik