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General discussion
Sick-listed workers without an employment contract seem to have a more vulnerable position in the labor market compared to sick-listed employees [1,2]. Mental disorders are the most frequently diagnosed disorders within this group [2]. Nevertheless, evidence-based return to work (RTW) interventions aimed at these vulnerable workers are lacking [3]. The main aim of this thesis was to improve RTW of workers without an employment contract, sick-listed due to a common mental disorder (CMD). The sub objectives of this thesis were: 1. to get a broad understanding of factors that in the long run influence sustainable RTW of sick-listed workers with a CMD; 2. to develop a new participatory supportive RTW program for workers without an employment contract, sick-listed due to a CMD, based on a participatory RTW program, integrated care and direct placement in a competitive job; 3. to evaluate the execution of this new program in practice; and 4. to evaluate its effectiveness and cost-effectiveness in shortening the duration until sustainable RTW in a competitive job. To reach our first aim we studied associations between biopsychosocial factors and sustainable RTW of sick-listed workers with a depressive and/or anxiety disorder, by using data of a large Dutch cohort study (ie, “The Netherlands Study of Depression and Anxiety”) [4]. To reach our other aims, we carried out a randomized controlled trial (RCT) titled “The Co-WORK study”, in which we compared the new participatory supportive RTW program with usual occupational healthcare (OHC) for Dutch sick-listed workers without an employment contract.

This chapter will start with a summary of our main findings, followed by a comparison with findings from other studies. Subsequently, challenges in improving RTW of workers without an employment contract sick-listed due to a CMD will be discussed. Thereafter, we will discuss the type of potential pitfalls of this thesis and methodological considerations. Finally, we will present implications of our findings for research and practice.

**Main findings**

Our study on longitudinal associations between biopsychosocial factors and sustainable RTW of sick-listed workers with a depressive and/or anxiety disorder showed that in the long run non-disorder-related factors, ie, the presence or absence of an employment contract, age and income, are more likely to influence sustainable RTW compared to disorder-related factors. These results reveal that it is insufficient to solely focus on
disorder-related factors, when one’s aim is to improve RTW of sick-listed workers with a CMD. Further, these results illustrate that some workers, such as workers without an employment contract, are more vulnerable than others when becoming sick-listed (chapter 2).

To shorten the duration until sustainable RTW of a vulnerable group of sick-listed workers with a CMD, ie, workers without an employment contract, we developed a new RTW program. The core of this participatory supportive RTW program consisted of a participatory approach aiming to identify and solve the main biopsychosocial obstacles for RTW in a stepwise process, in which the sick-listed worker actively participates together with a supervisor. Direct placement in a competitive job by a vocational rehabilitation agency was incorporated in the new program to overcome the most important obstacle for RTW of these workers, ie, the absence of a workplace to return to. An integrated care approach was added to the program to stimulate cooperation between professionals of the Dutch Social Security Agency (SSA) – responsible for OHC of these sick-listed workers – and other healthcare professionals, and to avoid conflicting advice about RTW (chapter 3).

However, in comparison with usual OHC for workers without an employment contract with a CMD, the new program did not result in a (cost-effective) improvement in the duration until sustainable RTW of these workers. The (adjusted) Hazard Ratio (HR) of the intervention group compared to the control group was 1.15 (95% CI 0.61–2.16). Also no significant differences were found in favor of the intervention group on any secondary outcome, ie, average working hours, duration until RTW in any type of employment, sickness benefit duration, and perceived physical and mental health and functioning.

Furthermore, intervention costs and medical costs were significantly higher in the intervention group compared to the control group. From a societal perspective, the maximum probability of cost-effectiveness was 0.64 at a willingness to pay of about €10 000 for one day earlier sustainable RTW. From the social insurer’s perspective intervention costs were significantly higher and benefits were lower, resulting in a low probability of financial return. “Per-protocol analyses”, including only those intervention group participants who actually participated in the new program (N=36), also revealed higher costs in the intervention group and no significant effects compared to the control group (chapter 6 and 7).
Nevertheless, due to low protocol adherence it remains unclear what the results would have been if the program had been executed according to protocol. Our evaluation of the execution of the new program in practice revealed that also in the “per-protocol group” (N=36) adherence to the protocol was low to reasonable. Overall, some steps of the program were not executed (timely). Especially the last step of the program, consisting of placement in a suitable competitive job by a vocational rehabilitation agency, did not have the intended result. An important barrier for a successful execution of this component, perceived by the stakeholders in our study, was a limited availability of suitable workplaces in the Dutch labor market. Stakeholder perceptions also revealed a poor collaboration between the Dutch SSA, the vocational rehabilitation agencies and the mental healthcare sector. This explains why the step between the making of a RTW action plan and job hunting by a vocational rehabilitation agency on the basis of this action plan was sometimes considered problematic, and why an integrated care approach was not always executed according to protocol. Other perceived barriers for a successful execution of the program were related to the type of (health) problems experienced by the clients, and to time constraints for the professionals who participated in the new program. Still, application of a participatory approach was quite positively evaluated by the stakeholders (chapter 4 and 5).

Comparison with other studies

Studies on prognostic factors for return to work

A systematic review by Cornelius et al [5] revealed that disability and RTW of sick-listed workers with mental health problems are for a large part influenced by non-disorder-related factors, such as personal and work-related factors. This is in line with the results of our study on longitudinal associations between biopsychosocial factors and sustainable RTW of sick-listed workers with a depressive or anxiety disorder (chapter 2). Audhoe et al [6] studied associations between biopsychosocial factors and work participation specifically in workers without an employment contract, sick-listed due to mental health problems, who are also the target population of this thesis. Their study also revealed that non-disorder-related factors seem to be important in predicting RTW. They identified perceived moderate or good health, a younger age, positive expectations of a full RTW, and still being (part-time) employed as strong prognostic factors for work participation in the long run [6].
Some of the modifiable factors identified in these prognostic studies, were particularly addressed in the participatory supportive RTW program evaluated in this thesis. To illustrate, vocational rehabilitation agencies were contracted in order to facilitate RTW. Furthermore, the program was designed to address all relevant biopsychosocial obstacles for RTW.

Studies on a participatory return to work program

Multiple studies have demonstrated a beneficial effect of a participatory RTW program on the duration until (sustainable) RTW of sick-listed employees with low back pain [7-9]. A study of Vermeulen et al [10] showed that this approach could also reduce the duration until sustainable RTW for sick-listed workers without an employment contract, ie, temporary agency workers and unemployed workers sick-listed due to a musculoskeletal disorder. The program evaluated in the study of Vermeulen et al was very similar to the program that was evaluated in this thesis. However, in the study of Vermeulen et al participants were placed in a (therapeutic) workplace with ongoing benefits from the SSA, whereas in our study only direct placement in a competitive (paid) job was considered suitable (with a maximum continuation of the sickness benefit payment of three months).

The beneficial effect of a participatory RTW program reported for sick-listed workers with physical complaints was found neither for the target population of this thesis (chapter 6) nor for sick-listed employees with a CMD [11]. This suggests a discrepancy in the effectiveness of a participatory RTW program between sick-listed workers with physical and mental health complaints. A review of workplace interventions by Van Vilsteren et al [12] reported a comparable discrepancy, ie, workplace interventions were found to improve RTW in workers with musculoskeletal disorders and no such evidence was found for workers with mental health problems. In addition, a systematic review of intervention characteristics that facilitate RTW after sickness absence by Hoefsmit et al [13] revealed that some facilitating intervention characteristics were particularly effective for sick-listed workers with physical complaints.

When comparing the cost-effectiveness of the participatory RTW programs evaluated in the aforementioned studies, we also see a higher probability of the program being cost-effective in reducing the duration until sustainable RTW in those studies focusing on workers with
physical complaints [14-17], compared to the study of Van Oostrom et al [18] concerning sick-listed employees with a CMD, and the findings of this thesis (chapter 7).

Nevertheless, Van Oostrom et al found a beneficial intervention effect and a higher probability of financial return for a subgroup of their population who at baseline intended to RTW, despite ongoing health complaints [11,18]. The selection of participants in the Co-WORK study was based on such a positive intention to RTW, and we adjusted our analyses for possible changes in this intention between selection and baseline. However, an important difference between participants in our study and the subgroup in the study of Van Oostrom et al was that participants in our study had no (longer a) workplace to return to. Differences in results between these two studies suggest a difference in effectiveness of a participatory RTW program between those workers with a CMD who are still employed and those who have no (longer an) employment contract.

Studies on return to work programs for workers without an employment contract, sick-listed due to a common mental disorder

Studies aiming to improve RTW of sick-listed workers with a CMD who have no employment contract are very limited [3]. However, recently another Dutch study on a RTW program for workers without an employment contract sick-listed due to mental health problems was conducted. This study by Audhoe et al [19] also revealed no beneficial intervention effect, compared to usual OHC. Their explanations for this lack of effect were low protocol adherence of the participating professionals of the Dutch SSA and unsuccessful counseling by contracted vocational rehabilitation agencies. Comparable factors were seen in our study (chapter 4 and 5).

Challenges in improving return to work of workers without an employment contract, sick-listed due to a common mental disorder

The findings of this thesis and the comparison of these findings with existing literature, reveal several challenges in improving RTW of workers without an employment contract, sick-listed due to a CMD. The Attitude-Social influence-self-Efficacy (ASE) model can be used to explain these challenges. Return to work can be considered as a complex behavioral change [20]. The ASE model suggests that behavioral change is determined by attitudes,
social influence and self-efficacy regarding this behavior, with the intention to change as a mediating factor [21-23]. The ASE model further assumes that the step between the intention to change a certain behavior and actual behavioral change can be impeded or facilitated by environmental characteristics, and is also dependent on the knowledge and skills needed to change this behavior [22,23]. The model was previously used to explain whether someone returns to work or not in studies by Van Oostrom et al [22] and Vermeulen et al [23]. Furthermore, a study of Brouwer et al [24] on behavioral determinants as predictors of RTW provided evidence for an association between the ASE determinants and the duration until RTW.

In the applied ASE model attitude towards RTW concerns the individual weighing of the perceived advantages and disadvantages of RTW, which results from beliefs, preferences, motivation and expectations regarding (time to) RTW. Social influence is the perception of what significant others think about RTW and the feedback of such significant others, eg, social support or peer pressure. Self-efficacy is the individual’s confidence in his/her ability to return to work, which may result from feelings of control, expectation regarding the feasibility of RTW and the attribution of complaints/barriers and solutions [21-23]. Barriers and facilitators that influence the relation between the intention to return to work and actual RTW may stem from all the systems involved in the societal context, ie, the workplace system, healthcare system, personal system and wage compensation system [25]. The applied ASE model is illustrated in Figure 1.

Based on our findings, we distinguish four challenges to improve RTW of workers without an employment contract, sick-listed due to a CMD:

1. the absence of a workplace/employer;
2. perceived ill-health and inability to return to work early after sick-listing;
3. poor collaboration between services in (occupational) healthcare and vocational rehabilitation;
4. constraints in time or capacity within the organizations involved.

On the next page, we use the ASE model to further explain why these factors can be considered important challenges.
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Figure 1 Applied ASE model to explain challenges in improving RTW of workers without an employment contract, sick-listed due to a CMD

1. The absence of a workplace/employer

The absence of a workplace to return to seems to complicate RTW of sick-listed workers without an employment contract to a large extent [1,2]. Firstly, the absence of a clear RTW perspective may influence the self-efficacy of these workers towards RTW. Our evaluation of the execution of the new participatory supportive RTW program in practice indicated that in the absence of this perspective, it is challenging to translate experienced mental health problems into concrete obstacles for RTW and to find practical solutions to overcome these obstacles (chapter 4 and 5).

Secondly, the absence of a workplace complicates the step between the intention to return to work and actual RTW. Actual RTW for these workers becomes dependent on the availability of suitable jobs in the labor market, and the willingness of employers to hire this particular worker. Compared to sick-listed employees, sick-listed workers without an...
employment contract often have less education or work experience [1,2]. Therefore, it is
difficult to compete with other job seekers. According to the sick-listed workers and
professionals who participated in the new program, these less favorable characteristics and
the limited labor market opportunities at the time the study was conducted – ie, during an
economic recession – were important barriers for placement in a suitable competitive job
(chapter 5).
Thirdly, the absence of a workplace to return to can also become a challenge when, because
of the provision of supportive income, the sick-listed worker experiences a so-called
“benefit trap” (chapter 2). The sick-listed worker might find himself/herself unable to get a
job that pays more than this supportive income, or is afraid that this benefit will no longer
be paid when he/she becomes sick-listed again. Such a benefit trap can be a disincentive to
return to work [26]. As the main focus of the new program was on RTW in a competitive
job without ongoing benefits, it is possible that a benefit trap was perceived by some of the
participants in this program. This shows that the absence of a workplace to return to can
influence the attitude of sick-listed workers regarding RTW.
Finally, workers without an employment contract may experience less social support in
their RTW process. Van Vilsteren et al [27] found that a participatory RTW intervention
aimed at employees with rheumatoid arthritis had a positive effect on the support these
employees experienced from their supervisor at the workplace. This supervisor support was
considered essential in the implementation of solutions to overcome RTW obstacles at the
workplace [27]. In an earlier study, Tamminga et al [28] identified experienced supervisor
support as a key factor in the RTW process of employed breast cancer survivors. For
workers without an employment contract, this kind of support is lacking.

2. Perceived ill-health and perceived inability to return to work early after sick-listing
Perceived ill-health and perceived inability to return to work early after sick-listing also
seem to influence RTW of workers without an employment contract, sick-listed due to a
CMD in multiple ways. Firstly, the more negative attitude of these sick-listed workers
towards their health status seems to affect their RTW process. Several studies reveal an
association between perceived health and RTW of workers without an employment contract
[6,29,30]. We used the 4-Dimensional Symptom Questionnaire (4DSQ) [31] and the Dutch
translation of the SF-36 [32] to assess perceived health among participants in the Co-
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**WORK** study (chapter 6). These scores revealed that, especially at baseline, perceived health among the participants in our study was much worse compared to norm scores of the SF-36 [32,33], and compared to scores on the 4DSQ in the aforementioned study among sick-listed employees with a CMD [11]. This is in line with findings of two Dutch studies [1,2], that showed a worse health perception of sick-listed workers without an employment contract compared to sick-listed employees. Both studies indicated that personal circumstances, such as financial or relational problems, often play an important role in the health perception of workers without an employment contract [1,2]. This illustrates that the evaluation of their own health may be negatively affected by factors in their personal environment.

Secondly, in line with their ill-health perception, workers without an employment contract, sick-listed due to a CMD, may not always feel confident to RTW. This means that feelings of self-efficacy are challenged. Participants in the new program stressed that they were sometimes insecure about their ability to return to work (chapter 5). This may be a reflection of fear-avoidance beliefs, which is related to subjective health complaints and negative illness perceptions [34]. In addition, also anticipated stigma may have played a role. A study of Brouwers et al [35] showed that anticipated stigma is highly prevalent among people with a depressive disorder. Both fear-avoidance beliefs and anticipated stigma are important risk factors for not returning to work [34,35].

Finally, a negative perception of these sick-listed workers’ health status and ability to return to work early after sick-listing by other stakeholders also seem to affect the RTW process of these workers, via the social influence of these stakeholders. Our qualitative evaluation of the execution of the new program in practice showed that the participating insurance physicians often thought that participation in this program could worsen mental health complaints. Therefore, a large number of eligible participants in the Co-WORK study allocated to the new program did not actually start in this program. This illustrates that, although the new program was aimed at a large group of sick-listed workers, the program was only considered suitable for a small group. Also for participants who actually participated in the new program this program was sometimes perceived too demanding by the professionals involved. Often the search for a suitable job was postponed, because of doubts about the participant’s readiness for RTW. Some participating professionals thought that first an increase of their mental resilience was needed (chapter 4 and 5). The early
focus on RTW in a competitive job, without further entitlement to OHC and sickness benefit, made it necessary for the participating professionals in the Co-WORK study to consider the participant’s readiness for RTW in an early phase. As a result, the health complaints that were still experienced by the participant may have received extra attention. Our economic evaluation revealed higher secondary care costs in the intervention group, which illustrates that the need for (mental) healthcare possibly became more prominent (chapter 7). However, doubts about the participants’ readiness for RTW may also stem from a lesser acceptance among the stakeholders involved to start planning RTW for sicklisted workers with unresolved mental health problems [11]. This belief might be rooted in the traditional first-train-then-place approach, with the emphasis on prevocational training and placement in volunteer or sheltered work [36-38]. These findings illustrate that workers without an employment contract, sick-listed due to a CMD, may feel little support to return to work early.

3. Poor collaboration between services in (occupational) healthcare and vocational rehabilitation

An important barrier in the step between the intention to return to work and actual RTW of workers without an employment contract, sick-listed due to a CMD, is the poor collaboration between the different services involved. Several studies demonstrate the importance of an integrated care approach in improving RTW of sick-listed workers, through a strong collaboration between healthcare providers and vocational rehabilitation services [8,36,39,40]. For that reason, in the new program the insurance physician of the SSA was encouraged to contact the healthcare provider of the sick-listed worker to agree on treatment and RTW. In addition, vocational rehabilitation agencies were contracted, to facilitate the search for a suitable competitive job. However, in our evaluation of the execution of the new program this integration of services was still considered an important challenge (chapter 5). Earlier, two Dutch studies [41,42] reported that in the Netherlands communication and collaboration between professionals in the curative healthcare sector, such as general practitioners (GPs), and the vocational rehabilitation sector, such as occupational physicians, is very limited. Difficulties in the implementation of an integrated care approach were also seen in the aforementioned study of Van Vilsteren et al [43]. The Co-WORK study revealed that even a telephone contact between the insurance physician
and the sick-listed worker’s healthcare provider could be difficult to accomplish. Also collaboration between professionals of the SSA and the contracted vocational rehabilitation agencies was often poor. To illustrate, case managers of the vocational rehabilitation agencies in some cases still developed a new RTW action plan instead of simply applying the action plan already developed at the SSA (chapter 5).

4. Constraints in time or capacity

Constraints in time or capacity within the organizations involved in OHC of workers without an employment contract, sick-listed due to a CMD, can also be an important barrier in the step between the intention to return to work and actual RTW of these workers. The professionals who participated in the new program indicated that due to competing priorities there had been too little time to execute the intervention properly (chapter 5). One of the consequences was less continuity in OHC than was prescribed in the protocol (chapter 4). This is an important concern, as less continuity in OHC has found to be associated with a longer duration until RTW [44,45]. In the aforementioned intervention study of Audhoe et al [19] organizational constraints at the Dutch SSA were also considered a possible explanation for the poor continuity in the execution of the intervention under study. Another possible explanation mentioned by Audhoe et al [19] was that professionals of the SSA were not used to work according to a tight protocol and therefore a behavioral change was needed, which was difficult to accomplish. Possibly, this also has played a role in our study. Because very few participants actually participated in the new program, this program was not adopted in the daily routine of the participating professionals, making it more difficult to adapt their usual behavior in accordance with the new protocol.

Visualization of challenges

To visualize the challenges explained above, we will continue our description of the two cases that were introduced in the beginning of this thesis (chapter 1). Both case descriptions illustrate several challenges.

After losing his job, Danny (43 years old), feels very insecure about his ability to work. Furthermore, he experiences some financial problems, causing a lot of
stress. These feelings lead to relationship problems and eventually to a divorce from his wife. After a while, Danny feels so depressed that he decides to claim for a sickness benefit at the Dutch SSA. At the SSA he has an appointment with the insurance physician for a medical examination. Here Danny tells about his depression that has become worse after his divorce. He has been referred to a psychologist by this general practitioner, but is still awaiting his first appointment. Furthermore, Danny has to find a new place to live and still carries some financial responsibilities for his ex-wife and kids. He wishes to return to work, but faces too many obstacles. The insurance physician advises Danny to first take some time to find new housing, to adapt to his new situation, and to start with treatment for his depression. The insurance physician thinks that Danny will not be able to return to work for at least three months.

In Danny’s case RTW seems to be challenged mainly by perceptions of Danny and his insurance physician regarding his health status and ability to return to work, which influences Danny’s perceived self-efficacy in reaching RTW, his attitude towards RTW, and experienced support to return to work. Also barriers in his personal environment and the healthcare system play a role.

*Barbara (38 years old) files a sickness benefit claim at the SSA due to anxiety complaints. Together with the RTW coordinator and labor expert of the SSA, she makes a RTW action plan. In this action plan, her main obstacles for RTW are listed, along with solutions to overcome these obstacles and suggestions for suitable work. Together they decide that Barbara should preferably return to work in an administrative job with a clear and fixed set of task descriptions, where she does not have to work together with too many people, and where she gets enough time to get used to this new routine. However, according to the case manager of a vocational rehabilitation agency she has been referred to, finding such a job is extremely difficult. Moreover, the case manager thinks that Barbara first needs some prevocational training to increase her confidence, skills and motivation.*
In Barbara’s case RTW seems to be challenged both by the absence of a job to return, which forms a barrier between the intention to return to work and actual RTW, and by the case manager’s perception of Barbara’s ability to return to work, which influences the support to return to work.

**Implementation failure or theory failure?**

Implementation failure may be a possible explanation for the absence of a beneficial effect of the participatory supportive RTW program, evaluated in the Co-WORK study. Firstly, a very small number of participants allocated to the new program actually participated in this program. Secondly, in case of participation in the program, adherence to the protocol was still only low to moderate. The challenges discussed above could have played a major role in this implementation failure. For example, a successful execution of the program may have been impeded by a limited availability of suitable jobs in the Dutch labor market, poor collaboration between services in (occupational) healthcare and vocational rehabilitation, and constraints in time or capacity within the organizations involved.

Because of implementation failure in the Co-WORK study, it remains unclear what the results of the new program would have been if the program had been executed as planned. Nevertheless, our comparison with other studies suggests that participatory RTW programs have a more beneficial effect for sick-listed workers with physical complaints and for those who have still an employment contract. Therefore, we can question ourselves whether the new program in its current form is actually suitable for our target population. More specifically, we can question ourselves whether this program sufficiently takes into account the challenges mentioned above. For example, the focus on direct placement in a competitive job, without ongoing benefits or intensive support, may have placed too high demands on all stakeholders involved, taking into account the perceived worse health of our target population, and the perceived inability of these workers to return to work early after sick-listing. Furthermore, in the new program the absence of a workplace to return to was considered an obstacle between the intention to return to work and actual RTW, while the absence of a workplace/employer also seems to affect the ASE determinants of RTW. The new program may not have sufficiently addressed all challenges that exist in the attitudes,
social influence and self-efficacy regarding RTW. This could suggest that also theory failure has played a role in the absence of a beneficial intervention effect.

**Methodological considerations**

There are some methodological features of this thesis that deserve consideration. Most of these methodological issues are related to the Co-WORK study, as this thesis mainly reports on this study.

A first relevant issue to consider is the outcome measure of the Co-WORK study, ie, duration until first sustainable RTW in a competitive job. An advantage of this outcome is that it can be considered robust, because it only includes sustainable RTW [10,11]. Furthermore, this outcome could be assessed with the use of registered data by the Dutch SSA, which is considered objective, accurate and complete. As a result, data on the primary outcome was complete for all participants. A disadvantage of this outcome measure is that the duration until first sustainable RTW is not only dependent on the OHC that has been delivered to the sick-listed worker by the SSA but is dependent on many factors [46], as was illustrated with the use of the ASE model. This means that, within the short time frame of one year, we could have expected only little effect of the intervention on our primary outcome measure. In our evaluation of the execution of the new program, some intermediate measures were assessed on which OHC may have a more direct influence, such as satisfaction with the program, the level of participation by the sick-listed worker in his/her own RTW process, and the degree of collaboration between the professionals of the SSA, the sick-listed workers’ healthcare providers and the contracted vocational rehabilitation agencies. However, these intermediate measures were not assessed in the control group. As a result, we do not know whether the new program has had a beneficial effect on these intermediate outcomes.

Another relevant methodological issue to discuss is that we may have insufficiently addressed barriers for a successful execution of the new program before the RCT was started. Although interviews were held with several stakeholders, knowledge about these barriers was limited. Moreover, the target population was not consulted prior to the development of the new program. Instead, we used information about the needs of our target population resulting from previous studies [2,22,23].
A third relevant methodological issue is that sick-listed workers could only participate in the Co-WORK study if they had a positive intention to return to work, despite ongoing health complaints. Based on the results of the aforementioned study of Van Oostrom et al [11] such intention was considered an important precondition for the success of a participatory RTW program. However, in contrast to the findings for the subgroup with such positive intention in the study of Van Oostrom et al, no beneficial intervention effect was found in our study. Despite the selection based on this positive RTW intention, there were still challenges in influencing the ASE determinants of RTW. Some of these challenges may have played less of a role in the study of Van Oostrom et al, such as the absence of a workplace to return to. It is also possible that the use of a non-validated single-item questionnaire to assess this intention was inadequate. Possibly, it was difficult for sick-listed workers in our study to express their intention to return to work or to fully understand the concept. This means that we may not have been able to actually select participants with a positive RTW intention, despite ongoing health complaints.

A last relevant methodological issue is the design of the Co-WORK study, consisting of a RCT. This study design is considered the “gold standard” in evaluation research [46]. We believe that our study was in line with most of the CONSORT Statement requirements for high quality trials [47], although blinding participants and participating professionals for randomization was not possible due to the nature of the intervention. The pragmatic design of our RCT well reflects the potential effectiveness of such a new program in a real-life setting. However, because our study was conducted in daily practice, its conduct was also influenced by several organizational and environmental changes [48]. Further, some coordination, such as the provision of follow-up training sessions for the participating professionals in the program, was needed to facilitate the conduct of the RCT in practice. Although this coordination has resulted in a good internal validity, it implies some challenges regarding the external validity of our findings. Therefore, generalizing the results of our study to another setting should be done with great caution. Because from an international perspective social security systems differ greatly, generalizing our results to another country may be particularly difficult. Nevertheless, an important strength of our study in this regard is that in addition to evaluating the effectiveness of the new program, we also studied the execution of this program in practice and its additional costs, which makes our evaluation comprehensive and transparent.
Implications for research and practice

The findings of this thesis have several implications for research and practice. We can distinguish two major implications for research and four major implications for practice.

Implications for research

1. We recommend future studies evaluating a new RTW program to also include intermediate measures (output measures) on which the intervention will have a more direct influence, in addition to the desired outcome.

2. To prevent implementation and theory failure in future intervention research, we recommend to identify barriers for a successful implementation and to assess the specific needs and context of the target group in an early phase. Earlier studies on a participatory RTW program [22,23] showed that Intervention Mapping (IM) could be a useful tool to facilitate successful adoption and implementation of a new program by important stakeholder groups. The aim of this iterative process is to combine theoretical knowledge and empirical knowledge, including input and feedback from the main stakeholders [49]. IM could facilitate the identification of competing priorities at the organizational level and matching new tasks and responsibilities to existing ones. Furthermore, by involving the target population, IM may help to tailor the program to the specific needs and context of this group. In addition, we recommend future intervention studies aiming to enhance RTW of vulnerable workers, such as workers without an employment contract, older workers and workers with a low income, to pay specific attention to the larger social-political environment. The findings of this thesis illustrate that many challenges in improving RTW of these workers seem to result from social-political factors, such as the increase of flexible employment relationships, the limited availability of workplaces for vulnerable workers, and the poor collaboration between the different services involved. Future intervention studies focusing on a similar target population could also use the insights we obtained into specific challenges in improving RTW of workers without an employment contract, sick-listed due a CMD.
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Implications for practice

1. We recommend professionals of the Dutch SSA to apply a participatory approach for the identification of RTW obstacles together with the sick-listed worker. Although the findings of this thesis provide no evidence for a beneficial effect of this approach on RTW of sick-listed workers with a CMD, our process evaluation revealed a high level of satisfaction with this approach among the stakeholders involved (chapter 4). Moreover, our qualitative evaluation showed that according to professionals of the Dutch SSA who applied this approach, it has led to a more active participation by the sick-listed workers in their own RTW process and has resulted in a better understanding of their barriers for RTW (chapter 5). However, better training of professionals in the application of a participatory approach is needed, because the resulting RTW action plans often did not explain adequately how a perceived obstacle for RTW could be overcome with practical solutions (chapter 4). Furthermore, we would like to emphasize that to enhance RTW of these workers, the development and evaluation of other or additional intervention components is necessary.

2. We recommend professionals and policy makers within the Dutch social security sector to create a RTW perspective for sick-listed workers without an employment contract. The results of this thesis demonstrate the importance of a workplace to return to, as this affects all ASE determinants of RTW and is very important in the step between the intention to return to work and actual RTW. The results of this thesis show that placement in a competitive job by a vocational rehabilitation agency can be very difficult to accomplish and seems to be dependent on several (social-political) factors (chapter 5). Therefore, it is important to consider alternative or additional measures. An alternative measure based on supported employment, an evidence-based approach for people with severe mental illness [37], may be the provision of ongoing support from a team of employment specialists and mental healthcare providers for both the sick-listed worker and his/her employer. A possible measure at policy level proposed earlier by Vermeulen et al [17], is realizing subsidized workplaces. Also a no-risk policy that compensates employers for future sickness absence costs, recently considered for (ex) cancer patients without an employment contract [50], may facilitate
sustainable RTW in a competitive job. Costs and benefits of these alternatives should be carefully considered.

3. We recommend professionals of the Dutch SSA to pay specific attention to the sick-listed worker’s perceived ability to return to work early after sick-listing. The findings of this thesis illustrate that also this perceived inability influences all ASE determinants of RTW. A very recent study by Volker et al [51] showed a beneficial effect on the duration until first RTW of employees sick-listed due to a CMD of a blended web-based intervention including a module aimed at changing perceptions with regard to RTW while having symptoms, based on cognitive-behavioral principles. Possibly, also workers without an employment contract could benefit from a similar module. Therefore, we recommend professionals (and decision makers) of the Dutch SSA to carefully consider implementation of a similar module. In addition, also changing perceptions of OHC professionals regarding these sick-listed workers’ ability to return to work early after sick-listing may be necessary.

4. Finally, all challenges in improving RTW of workers without an employment contract, sick-listed due to a CMD, reveal the importance of a better integration of services in (occupational) healthcare and vocational rehabilitation. Lessons may be learned from supported employment. In this approach integration of services is facilitated through regular meetings with all stakeholders involved, coordinated by a single case manager, which provide a vehicle for discussing clinical and rehabilitation issues relevant to work [37]. Such an approach may help to simultaneously address treatment and vocational needs, which may also increase the confidence in the sick-listed worker’s ability to return to work. Further, this approach may facilitate continuity in care. However, to implement such a cooperation, it seems important that the professionals within these different disciplines acknowledge the mutual dependence of each other’s service or knowledge, and it seems necessary to overcome practical barriers for collaboration [42]. Based on a Dutch study on collaboration between different healthcare professionals [42], we can recommend to emphasize the need for collaboration already in the education of these professionals.
Chapter 8

Conclusions

The results of this thesis underline the need for further development of a suitable RTW intervention for workers without an employment contract, sick-listed due to a CMD. The new participatory supportive RTW program did not result in a (cost-effective) reduction in the duration until sustainable RTW of these vulnerable workers, compared to usual OHC. Therefore, we cannot recommend to implement the new program in the Dutch social security sector in its current form. The findings of this thesis provide important insights into the complex challenges in improving RTW of workers without an employment contract, sick-listed due to a CMD, and into the influence of these challenges on the attitude, social influence, self-efficacy and intention to return to work, and actual RTW of these workers. These insights can be used for the development and evaluation of a more suitable RTW program in future.
References


