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Return to work for temporary agency workers and unemployed workers, sick-listed due to musculoskeletal disorders

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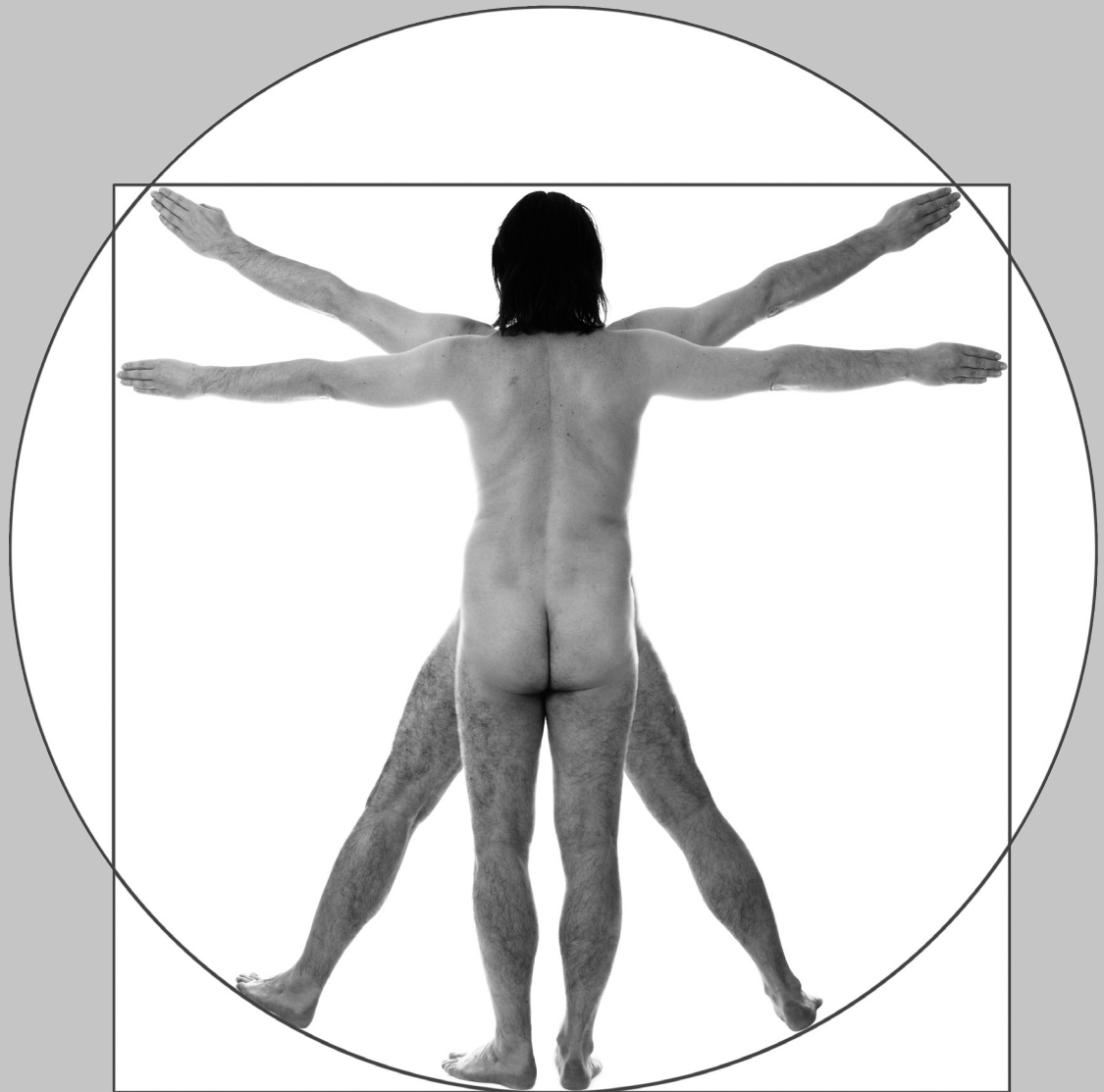
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Summary

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Sickness absence and work disability due to musculoskeletal disorders (MSD) are a common and substantial public health problem with major economical consequences worldwide[1, 2]. To date, most RTW intervention research is aimed at sick-listed (established regular) employees, i.e. workers with relatively permanent employment relationships. Participatory RTW interventions have proven to be (cost-)effective for work resumption of sick-listed employees suffering from musculoskeletal health complaints, e.g. (sub)acute and chronic low back pain. In contrast, development of effective RTW interventions for sick-listed workers without (relative) permanent employment relationships is lagging. However, these workers represent a vulnerable group within the working population as they have a poorer health status, are burdened with a greater distance to the labour market, and have an increased risk for (long-term) work disability, compared to regular employees. Moreover, when sick-listed, these workers have in most cases no workplace/employer to return to. Hence, for these (more) vulnerable workers, there is a need for development of RTW interventions with active involvement of important stakeholders and the possibility of a temporary workplace for therapeutic RTW. Therefore, this thesis focused on a newly developed participatory RTW program for temporary agency workers and unemployed workers, sick-listed due to MSD. The main focus of this thesis is on the STEP-UP study, a randomized controlled trial in which the new participatory RTW program is compared to care as usual.

OHC and return-to-work of sick-listed workers without an employment contract

Chapter 2 described cross-sectional data analyses of a large Dutch cohort of workers without an employment contract who were, at baseline, at least 13 weeks sick-listed. The aim of this cohort study was to examine characteristics of workers without an employment contract, sick-listed for at least 13 weeks; to examine occupational health care (OHC) for this group of sick-listed workers; and to examine the association between applied occupational health care interventions and RTW. The results showed that the sick-listed workers without an employment contract in this study were characterised by a low level of education. At 7-9 months after the first day of reporting sick most of the workers viewed their health as fairly poor or poor and the most reported reason for absenteeism was having musculoskeletal complaints.

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R1 Furthermore, only 19% of the workers had (partially or completely) returned to work,
R2 whereas the majority (81%) of the workers had not (yet) started working again. With
R3 regard to the received OHC, the most frequently reported (49%) OHC intervention
R4 was 'the OHC professional discussed RTW'. Only 19% of the workers reported that a
R5 RTW action plan was discussed and made while 74% of the workers reported that no
R6 RTW action plan was made by their insurance physician. Moreover, loglinear multiple
R7 regression analysis showed a significant positive association between RTW and the
R8 reported interventions: 'OHC professional discussed RTW' (OR 1.57 ; 95% CI 1.03 –
R9 2.40); and 'OHC professional made and discussed a RTW action plan' (OR 1.87 ; 95%
R10 CI 1.16 – 3.0). The intervention 'OHC professional referred sick-listed worker to a
R11 vocational rehabilitation agency' was significantly associated with no RTW (OR 0.52 ;
R12 95% CI 0.29 – 0.95). In conclusion, further research is needed to develop tailor-made
R13 OHC interventions to optimize the frequency and content of OHC interventions and
R14 to evaluate the effect of these interventions on RTW of the vulnerable sick-listed
R15 workers without (relative permanent) employment relationships.
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R17 **Development of a participatory RTW program for workers without an employment** R18 **contact, sick-listed due to MSD.**

R19 In chapter 3, the structured development of a participatory RTW program for
R20 temporary agency workers and unemployed workers, sick-listed due to MSD, is
R21 described. The Intervention Mapping protocol was used to combine theory, evidence,
R22 and practice in the making of a specifically tailored participatory RTW program, based
R23 on an earlier developed cost-effective participatory RTW intervention for regular
R24 sick-listed employees with sub acute low back pain. Intervention Mapping offered
R25 the unique opportunity to analyse the potential of the new RTW program, taking into
R26 account the specific factors of the context in which the participatory RTW program
R27 was implemented and used. The Attitude-Social influence-self-Efficacy (ASE) model
R28 was used as a theoretical framework for determinants of behaviour regarding RTW of
R29 the sick-listed worker and development of the intervention. Important stakeholders
R30 were involved in all steps of program development and implementation, i.e. board
R31 and management of the Social Security Agency (SSA), staff and OHC professionals at
R32 the SSA, representatives of national temporary work agencies, and representatives
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of vocational rehabilitation agencies. It became clear that the absence of an actual workplace to return to and decreased possibilities for RTW in (temporary) adapted work were considered major obstacles for RTW. Next, results of semi-structured interviews and ‘fine-tuning’ meetings were used to design the final participatory RTW program. Following the Intervention Mapping protocol resulted in an RTW intervention that stimulates early RTW intervention, active involvement of the sick-listed worker, more contact with the OHC professionals at the SSA, making of a consensus based RTW action plan, the possibility of a temporary (therapeutic) workplace to RTW, and structural communication between all parties involved.

Design of the study

Chapter 4 describes the design of a randomized controlled trial to investigate the cost-effectiveness of the newly developed participatory RTW program, compared to care as usual, for temporary agency workers and unemployed workers, sick-listed due to MSD. Five front offices of the Dutch Social Security Agency (SSA) and four large Dutch vocational rehabilitation agencies (Olympia, Adeux, Capability, and Randstad Rentr ee) in the eastern part of the Netherlands participated in the study. The study population consisted of temporary agency workers and unemployed workers 2-8 weeks sick-listed with MSD as the main health complaint for the sickness benefit claim. The main exclusion criteria were a conflict with the SSA regarding a sickness benefit claim or a long-term disability claim; inability to complete questionnaires written in the Dutch language; a legal conflict, e.g. an ongoing injury compensation claim; and an episode of sickness absence due to MSD within one month before the current sickness benefit claim. The new participatory RTW program consisted of a structured stepwise protocol aimed at making a consensus-based RTW action plan with the possibility of a temporary (therapeutic) workplace to RTW. Outcomes were measured at baseline, 3, 6, 9 and 12 months. The formulated primary outcome measure was duration of sickness benefit from the first day of randomization until benefit claim closure for at least 4 weeks without (partial of full) revival of the sickness benefit. Secondary outcome measures were: time until sustainable first RTW (defined as the duration in calendar days from the day of randomization until return to work in paid regular work or regular work with supportive benefit for at

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R1 least 28 consecutive days), total number of days of sickness benefit during follow-
R2 up; functional status; intensity of musculoskeletal pain, and perceived health. Data
R3 on sickness benefit claim duration were acquired from the SSA database after the
R4 follow-up period. The RTW data were collected from the SSA database, including the
R5 workers' files. Data on the health-related secondary outcomes were collected using
R6 self-report questionnaires.
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R8 **Effectiveness of the participatory RTW program**

R9 Chapter 5 evaluates the effectiveness of the participatory RTW program compared
R10 to usual care for temporary agency workers and unemployed workers, sick-listed due
R11 to MSD. In total, 163 workers, sick-listed for 2-8 weeks due to MSD, were randomly
R12 allocated to the participatory RTW program (n=79) or to usual care (n=84). The median
R13 duration until sustainable first RTW was 161 days in the intervention group and 299
R14 days in the usual care group. In addition, the per-protocol analysis showed a median
R15 duration until sustainable RTW of 157 days in the intervention group versus 330 days
R16 in controls. The new RTW program resulted in a non-significant delay in RTW during
R17 the first 90 days (possibly due to more intensive involvement after enrolment in the
R18 new participatory RTW program), followed by a statistically significant advantage in
R19 RTW rate after 90 days (hazard ratio of 2.24 [95%confidence interval 1.28 to 3.94]
R20 $p=0.005$). Both groups improved over 12 months with regard to their functional
R21 status, pain intensity, and perceived health, but no statistical significant differences
R22 between both groups were found. Furthermore, although not statistically significant,
R23 the new RTW program had a negative impact on sickness benefit duration (intention-
R24 to-treat: median of 69 days; per-protocol: median of 59 days). This was mainly due
R25 to the fact that in most cases the therapeutic workplaces were offered with ongoing
R26 sickness benefit, i.e. the total number of days working in these temporary workplaces
R27 represented 95% of the difference in total benefit duration between both groups.
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R29 **Feasibility of the participatory RTW program**

R30 The objective of chapter 6 is to evaluate the feasibility of the participatory RTW
R31 program for temporary agency workers and unemployed workers, sick-listed due to
R32 MSD. The feasibility study concerned part of the study population, i.e. the workers
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who were allocated to the participatory RTW program group. The aims were to describe the reach and extent of implementation of the participatory RTW program, the satisfaction and experiences of all stakeholders, and the perceived barriers and facilitators for implementation of the participatory RTW program in daily practise. After enrolment, seven sick-listed workers did not start with the participatory RTW program. The main reason for not starting was full recovery from MSD before start of the program. In total, 38 of the 72 sick-listed workers who started with the program participated in the meetings with the RTW coordinator with the making of a consensus-based RTW action plan. In total, 98 obstacles for RTW were identified and prioritized. The most identified obstacles were related to the physical workload, commuting, low level of education/work, job design, and work schedule. In total, 30 participants were referred to a vocational rehabilitation agency of which 19 workers were actually placed in a temporary (therapeutic) workplace. Furthermore, three workers were placed in a temporary (therapeutic) workplace through the personal network of their labour expert and four workers found a suitable workplace on own initiative. The majority of the sick-listed workers felt taken seriously during the meetings with the OHC professionals and the overall satisfaction was good (63% with the insurance physician, 66% with the labour expert, and 72% with the RTW coordinator). Furthermore, the majority of the labour experts experienced a minor or major contribution of the presence of the RTW coordinator. Largely, implementation of the program was performed according to protocol. However, offering of suitable temporary workplaces was delayed with 45 days. The results of this study indicate overall feasibility for implementation of the participatory RTW program in daily practice. However, to overcome important barriers for implementation, more attention should be paid to improve timely offering of suitable temporary workplaces; to describe more clearly the program goals and the professional's roles; to reduce the administrative time-investment; and to offer additional support for workers suffering from complex multi-causal health problems.

Cost-effectiveness of the participatory RTW program

Chapter 7 describes an economic evaluation of the participatory RTW program compared to usual care for temporary agency workers and unemployed workers, sick-

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R1 listed due to MSD, after 12-months of follow-up. Cost-effectiveness was evaluated
R2 from both the social insurers' and societal perspective. Cost-benefit was evaluated
R3 from the societal perspective. The effect outcomes were sustainable first RTW and
R4 quality adjusted life years.

R5 Total health care costs in the participatory RTW program group (€10,189; SD 7055) were
R6 statistically significantly higher compared to care as usual (€7,862; SD 7394), mainly
R7 due to higher Social Security Agency costs associated with the new intervention. The
R8 cost-effectiveness analyses from both the social insurer's and societal perspective
R9 showed that the new intervention was more effective but also more costly than
R10 usual care, i.e. to gain one day earlier RTW by using the participatory RTW program
R11 approximately 80 Euros (76 and 82 Euros, respectively) needed to be invested.
R12 Furthermore, from a societal perspective, there was a net monetary benefit after 12
R13 months, i.e. every Euro invested was doubled due to the gain in productivity. The net
R14 societal benefit of the new participatory RTW program compared to care as usual was
R15 2,073 Euros per worker. Overall, the new RTW program enhanced work resumption
R16 of vulnerable workers without (relative) permanent employment relationships, sick-
R17 listed due to MSD, enhanced their social participation, and generated a net economic
R18 benefit. However, on the one hand, investments were made on the part of the
R19 Social Security Agency, i.e. made from public money and, on the other hand, the
R20 benefits were on the part of the employers. The realization of shared cost-benefit
R21 arrangements between the Social Security Agency and employers, e.g. realization of
R22 subsidised (temporary) workplaces, may increase the chance of convincing decision
R23 makers and subsequent successful implementation of the new RTW program in daily
R24 practice. Furthermore, a potential solution could be to increase the responsibilities
R25 of employers with regard to the facilitation of RTW of sick-listed workers without
R26 an employment contract. From this perspective, it can be recommended to asses
R27 the possibilities to make temporary agencies more responsible for RTW of sick-listed
R28 temporary agency workers, i.e. offering a suitable workplace for (therapeutic) RTW
R29 and having financial responsibilities with regard to vocational rehabilitation costs.
R30 Finally, creating a network of potential (temporary) workplaces and not having to
R31 contract commercially operating vocational rehabilitation agencies could reduce the
R32 costs for applying the new RTW program.

General discussion

Chapter 8 discusses the findings of this thesis with regard to current evidence. In addition, methodological characteristics of the study are discussed. International literature shows that a global perspective has been adopted to address the multicausality of work disability proposing that RTW interventions should encompass the following three central elements: 1. addressing individual factors, 2. addressing work(place) factors, and 3. involvement of the various stakeholders. We believe all three elements were sufficiently incorporated in our newly developed participatory RTW program, namely: work disability management tailored to the needs of the sick-listed worker to remove the (individual) barriers to RTW, i.e. making of a tailor-made consensus-based RTW action plan; addressing work factors by offering the possibility of a suitable temporary (therapeutic) workplace for RTW; and stimulating strong involvement of the different stakeholders involved in the RTW process of the worker. Moreover, application of the IM protocol for intervention development and implementation ensured a clear focus on actual RTW and integration of the intervention program into regular vocational rehabilitation practice. In addition, the new RTW program offered the possibility of work resumption in a temporary (therapeutic) workplace, thus facilitating the change of focus from work disability to functional abilities in a early stage after reporting sick by letting the worker experience that work resumption in suitable work is possible. This focus on early recovery of activities, including RTW, was in our study identified as a facilitator for implementation. Moreover, this change of goal setting towards not only recovery of health but also towards function restoration already has been adopted in current Dutch OHC guidelines as formulated by the Netherlands Society of Occupational Medicine (NVAB).

Furthermore, findings suggest that societal support for supported employment interventions, e.g. IPS interventions in the US and the Danish Flex-jobs Scheme, helps work disabled workers to successfully (re)enter the labour market. However, Dutch employers may be hesitant in employing workers with functional limitations. From this perspective, societal thoughts about RTW and enhancing a sustainable contribution to the labour force of (more) vulnerable workers without an employment contract and workers with flexible labour agreements needs to shift. Towards an understanding

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R1 that investing in strengthening of the labour supply and a continued strengthening
R2 of measures targeting integration of vulnerable workers is of vital importance for the
R3 welfare of not only the individual worker but Dutch society as a whole.

R4 Finally, besides offering the possibility of supported employment to facilitate RTW,
R5 recognition of the importance of incorporation of work disability management and
R6 RTW as part of an integrated health care approach to improve functioning in working
R7 life can be the first step towards a more sustainable contribution of vulnerable work
R8 disabled workers who experience a distance towards the labour market.

R9 **Recommendations**

R10 The main recommendations for future research are:

- R11 • To perform studies with a longer follow-up to investigate RTW patterns after
R12 one year (from baseline).
 - R13 • To explore long-term disability benefit patterns. To see if an earlier
R14 sustainable return to the labour market in the first year results in a decrease
R15 of (awarded) long term disability benefit claims.
 - R16 • To perform exploratory subgroup analyses to uncover what works best for
R17 whom (and at what cost).
 - R18 • To investigate if the participatory RTW program is also (cost-)effective for
R19 other groups of sick-listed workers without an employment contract, for
R20 instance workers with chronic MSD or workers with mental health disorders
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The main recommendations for practice and policy are:

- A fundamental change in Dutch policy is needed to improve labour participation of sick-listed workers without an employment contract. For instance, the realization of arrangements for subsidised temporary workplaces to share costs between society (and thus from public funding), and employers. Furthermore, strengthening of the responsibilities of temporary agencies to offer suitable workplaces for RTW and to have financial responsibilities with regard to vocational rehabilitation costs of sick-listed temporary agency workers.
- Incorporation of study findings in (occupational) health care guidelines. This can contribute to more focus on work-related factors and improve coordinated care between all health care professionals involved and subsequently decrease unnecessary long-term work disability.
- Revision of sickness benefit criteria. In line with the already existing work disability regulation for regular employees, implementation of the participatory RTW program could be facilitated if it would be possible to establish full work ability on the ground of RTW in suitable other work with equal earnings. Moreover, this can help the worker to change the focus towards work ability and possibilities for RTW.
- Utilization of existing expert knowledge of the labour market with the presence of regional job/employer networks to improve availability of temporary workplaces.

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